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JOHNSON INDIVIDUAL ROOM TEMPERATURE CONTROL

Oneida Community Limited's Kenwood, N.Y., Building. A. L. Brockway, Architect, Kenwood, N.Y., E. P. Bates, Mechanical Contractor, Utica, N.Y.

PROPER TEMPERATURE CONDITIONS ENCOURAGE EFFICIENCY OF WORKERS AND SAVE TONS OF FUEL

Since 1928 . . . the men and women employed in the Oneida Community Ltd. Kenwood building have given little thought to the regulation of heat in their offices. It is AUTOMATIC. The Johnson Temperature Control System is always on the job. No shivering with cold—no overheated, lagging workers. 57 individual room thermostats operate 111 radiator valves in this Oneida Community Administration and Office building—to maintain correct temperatures, to provide healthful comfort and to save large quantities of fuel.

The uniformity of Johnson performance means that plant operators enjoy maximum convenience with minimum effort. They are able to turn their attention to other important work. Look into the advantages of Johnson Automatic Control Systems. There is a Johnson engineer near you who will be glad to talk over the desirable features and savings that the Johnson engineered Control will bring to your building . . . regardless of whether or not the building is old or new. Johnson maintains direct branch offices in principal cities. Call or write for a conference at your convenience. Johnson Service Company, Milwaukee 2, Wisconsin.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

DESIGN · MANUFACTURE · INSTALLATION · SINCE 1885

MANUFACTURERS RECORD

ESTABLISHED 1882

A Publication for Executives

Volume 115 **MAY, 1946** **Number 5**

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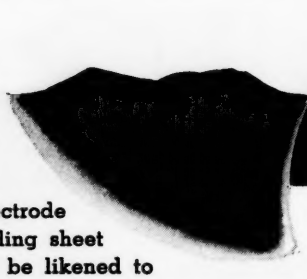
Burning Question — Solved by Metal Spray



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"SM"

FOR SHEET METAL WELDING

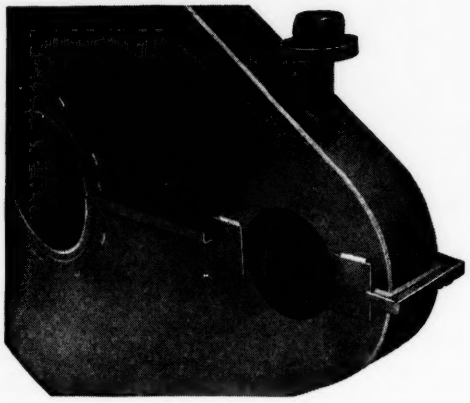
CLASS AWS-ASTM E-6013

"SM" is the new P & H electrode — spray type — for welding sheet metals. Applying it may be likened to "brushing on" weld metal.

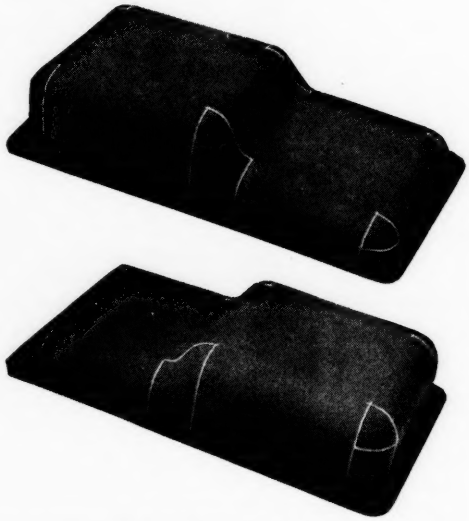
"SM" reduces material spoilage. Its lower heat requirements eliminate the hazard of "burn-throughs" and "suck-ins". Removing slag is easier, chipping isn't necessary. The weld deposit is smoother and flatter, grinding operations are eliminated. "SM" is much easier to use — to produce the cleaner, stronger, more uniform welds. It cuts costs to the bone.

"SM" is a typical example of P & H welding research and development. Thoroughly tested and proved, it's the newest addition to America's most complete line of electrodes and arc welding equipment. Try "SM" on your work.

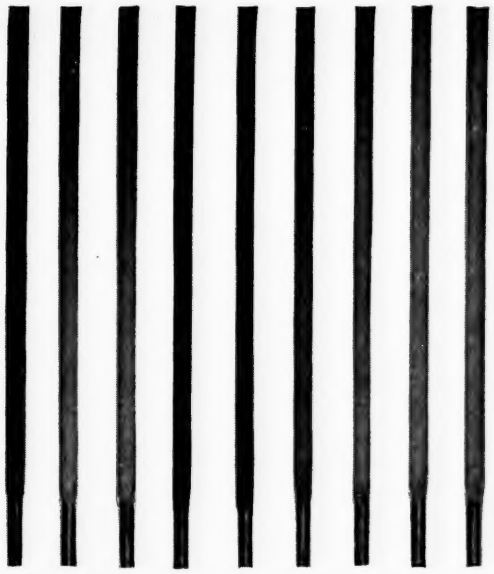
use for *all* light gauge welding



This gear case of 12-gauge steel was tacked and welded throughout with "SM." Note the clean, flat beads which save expensive grinding and finishing. "SM" can improve the strength and appearance of your products—and save you money!



When welding such products as these oil pans of 16-gauge sheet metal, "SM" gives lower penetration—speeds up welding. "SM" is the perfect electrode for the fabrication of trailer and automobile bodies, tanks, heating equipment, vents or grills, farm machinery, metal lockers, galvanized sheet, etc.



"AW-2B"	"AW-4"	"CM-50"	"DH-2"	"FW"	"AC-3"	"PF"	"AC-1"	"AP"
AWS E-10020	AWS E-10012	AWS E-7011	AWS E-6020	AWS E-6020	AWS E-6013	AWS E-6012	AWS E-6011	AWS E-6010

call on for all electrode requirements

There is a P & H Electrode in the correct type and size for all mild steel applications as well as for welding stainless and alloy steels and for hard surfacing. Above are shown a few of the complete mild steel group.

CONVINCE YOURSELF TRY P & H "SM"

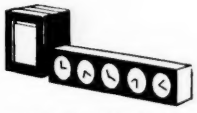
AMERICA'S MOST COMPLETE ARC WELDING SERVICE

DC WELDERS

AC WELDERS

WELDING ELECTRODES

WELDING POSITIONERS



WELDING PRODUCTION CONTROL SYSTEMS

ELECTRIC HOISTS

P & H

WELDING ELECTRODES

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LITTLE GRAINS OF SAND

"Little drops of water, little grains of sand,
Make the mighty ocean, and the pleasant land."

Subsidies, thanks to government propaganda, have come to be considered by many people as panaceas, and the next best thing to perpetual motion.

Subsidies, far from being panaceas for economic ills are actually insidious narcotics. It is conceivable that there are circumstances when subsidies are justifiable as a purely makeshift expedient, just as are narcotics. However, indiscriminate government subsidies over an indefinite period represent not an answer to a problem, but an aggravation of it.

Let us assume that kiddie cars are an extremely desirable item to have around, but that they cost more to produce than the OPA says the public should pay for them. The answer? Subsidies. The fact that the public pays the subsidies is carefully hidden by the planners. The net result is that the people who want kiddie cars pay less than cost for them, while those who don't even have a kiddie foot a part of the bill.

The American people have long been noted as the foremost exponents of the "Let George do it" theory. Today George seems to be the federal government.

When a labor dispute in a critical industry seems to be at an impasse, John Doe feels (and who can blame him?) that the government will step in and settle things before the situation reaches John Doe personally.

We wonder if John Doe has ever considered the one-sidedness of the set-up. When Uncle Sam intervenes in the role of arbiter in a labor dispute, the cards are stacked. Management must lose; labor must win.

This by no means implies partiality on the part of the individual government mediators. It is true simply because our government cannot yet tell the worker under what conditions he must work. On the other side of the fence, however, it can and does tell management the conditions under which it can employ workers. Thus when management and labor lock horns and government must decide the issue, it is always management that must give ground, because the government can control management. Nothing like having a home-town referee, is there?

Throughout our history, regardless of the party affiliation of our administration, government statistics have been regarded as gospel truth. This reputation did not just happen; it was earned by the unswerving integrity of our civil servants and their leaders, who believed that partisan politics should have no place in keeping the American people informed as to the state of their nation.

Lately, however, there has been an alarming trend in the opposite direction. The Secretary of Commerce placed a powerful weapon in the hands of the United Automobile Workers when he said in effect that government figures proved General Motors could pay a 24% wage increase without raising prices. Not until after the strike was over did the secretary repudiate his former claims. Right now there is strong labor opposition to the appointment of a gentleman of unquestioned honesty and capability as Commissioner of Labor Statistics because he has refused to make those statistics say what labor wants them to say.

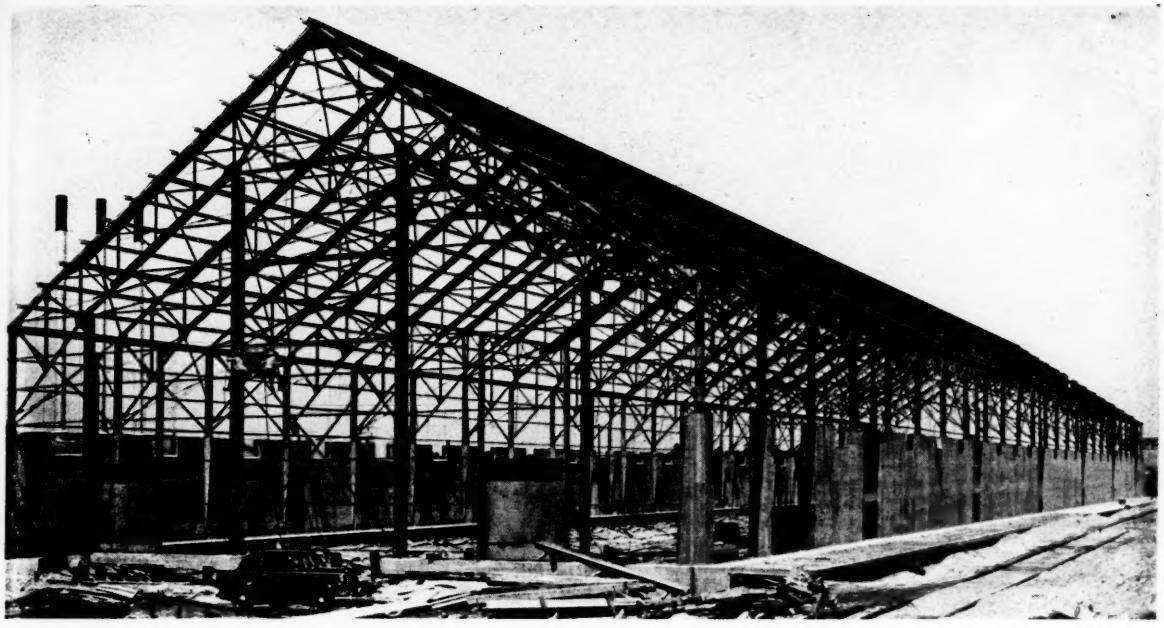
We are being told by one government agency that the line on prices has been held. Are we to believe that, or are we to believe the price tags we see in the stores? We are being told by another that the budget will be balanced, and the national debt reduced. Can we place faith in that statement? We'd like to think so, but in these days who can be too sure?

Cigarettes are a Southern product. There was recently an acute shortage of cigarettes. That shortage no longer exists. The OPA still controls all phases of this Southern industry. Why?

The blame for the present inflationary tendencies was laid squarely at the door of the administration recently by Dr. Emerson P. Schmidt, director of the U. S. Chamber of Commerce's department of economic research. Dr. Schmidt stated that the government's economic advisers, in one of the greatest blunders in history, anticipated an extreme deflationary period immediately following the end of the war. Consequently all administration moves, including the backing to the hilt of any and all wage increases, were designed to combat this non-existent deflation. "Unless," concluded Dr. Schmidt, "we can secure a higher order of economic insight and statesmanship, we are likely to continue to be led into more and more economic chaos. Unless we can get a more or less complete replacement of the relatively small number of government advisers responsible for this irretrievable damage to the American economy, we are not likely to have an administration properly advised as to how to get out from under price control."

The first shot in the battle to bring professional baseball players within the fold of organized labor was fired in Baltimore recently, with a charge before the NLRB that Clark Griffith, owner of the Washington Senators, was guilty of unfair labor practices under the Wagner Act.

(*Continued on page* 14)



Warehouse Building erected for the Alabama State Docks, Mobile

READY for the Big Jobs ahead

The Army-Navy "E" with two stars was awarded for quality and speed of production.

The construction program in the South has scarcely got underway yet. It is going to be the biggest ever seen in the area.

Steel will be needed for all major jobs, steel in large quantity, steel accurately fabricated. And that's what we have. We're ready!

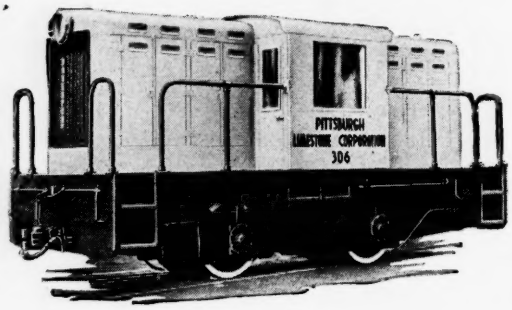
Our modern steel fabricating plant and our staff of competent engineers are at the service of contractors and builders.

SOUTHERN STEEL WORKS

KIRKMAN O'NEAL, *President*

Offices: 745 NORTH 41st STREET, BIRMINGHAM, ALABAMA

LOCOMOTIVES *serve* BEST *when* FITTED *to their* JOB



Analyzing haulage conditions and building fine locomotives to FIT those particular conditions—that has been our business for almost a half century—and we know HOW.

If rail haulage is an important part of your operations, the CORRECT SELECTION of your locomotive has a major bearing on your operating costs—and your profits.

WRITE FOR SURVEY DATA SHEET

DAVENPORT LOCOMOTIVES — Speed all over the World

We will gladly send you a Survey Data Sheet to enable you to send our engineers a complete description of your haulage conditions. In turn we will submit a reliable recommendation covering the size and type of locomotives that will perform YOUR work in terms of highest efficiency and lowest ton-mile costs. You will not be obligated in any way—and may discover a valuable way to improve your operations by installing an INDIVIDUALIZED Davenport Better-Built Locomotive.

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STEAM
GASOLINE
DIESEL
with
ELECTRIC
or
MECHANICAL
DRIVE

ARMY ★★ NAVY

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DAVENPORT LOCOMOTIVE WORKS
A DIVISION OF DAVENPORT BESLER CORPORATION, DAVENPORT, IOWA

(*Continued from page* 10)

One Robert Murphy of Boston, is in charge of the drive to bring all ball players into the AFL. If he is successful, and with all the legislative cards stacked against management there is small reason to suppose he will not be, the possibilities are fascinating. We can see one now.

It is the last half of the ninth, with the Yankees playing the Cardinals in the World Series. Two men are out, the winning run for the Yanks is on third, and Joe DiMaggio is coming up to the plate. As Joe steps up the Yankee shop steward (probably the third string catcher) slides down the bench towards Manager McCarthy. "Sorry," he says, "but you'll have to send someone else up to bat. Joe's already been up four times, and that's all any union member can bat in one game!"

"The strength of the United States during this war lay not in government regulation or control, nor in the piling of bureau upon bureau, nor in the expanding of the personnel of departments. It lay in the railroads, the steel plants, the automobile factories, the little factories owned by families, the big enterprises owned by myriads of stockholders. No government-owned enterprises anywhere in the world showed the ability or the capacity to produce in equal quantity or with equal efficiency. The war was a test, and private enterprise in the United States met that test."

—*George E. Sokolsky*

The fact that the money our government spends so freely does not come from a bottomless quarry but from the pockets of each and every one of us is one that is all too often forgotten. We complain about high tax rates, yet condone vast treasury outpourings for intangible and often non-existent benefits.

This is only one of the problems considered by the Committee on Postwar Tax Policy, which recently published a report entitled *A Tax Program for a Solvent America*. Free copies of this report may be had by writing to Public Information Department, Tax Foundation, 30 Rockefeller Plaza, New York 20, N. Y.

Most of us are agreed that prohibition was a bad thing. Whether we believe that the prohibition of manufacture and sale of alcoholic beverages was a good or bad proposition, we all agree that the Volstead Act brought about a wave of lawlessness unprecedented in our history up to that time.

Now, because of its constant refusal to face realities in the matter of price structure, the OPA has

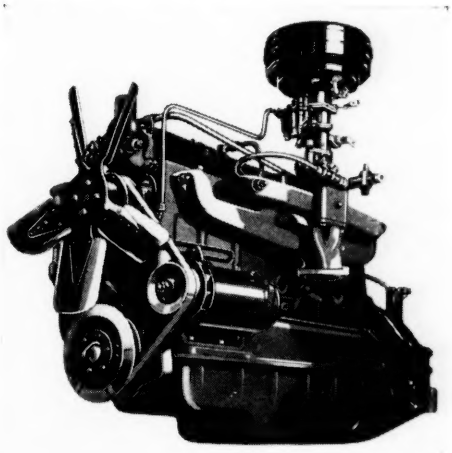
(*Continued on page* 70)

Ask G.I. Joe about GMC RUGGED LONG LIFE

Returning Service Men regard GMC army trucks as the most rugged transport vehicles of the war. In GMC's fine war record there is plenty of reason for this belief.

GMCs of one Quartermaster Company rolled up a million miles . . . through the Pacific's swampy jungles, blinding dust and destructive tropical humidity . . . without one man-day lost due to motor mishap. GMCs stormed over the roads of Normandy, bumper to bumper, to help haul the 500,000 tons of supplies transported by the famous Red Ball Express. Other GMCs pulled tremendous loads over the mountains of Italy, the sands of Africa, the frozen tundras of Alaska.

You can look for similar rugged reliability in the GMC you buy for commercial use. For every GMC civilian model from ½ to 20 tons has the same basic engine design as that which powered nearly 600,000 war-proved GMC trucks and "Ducks."



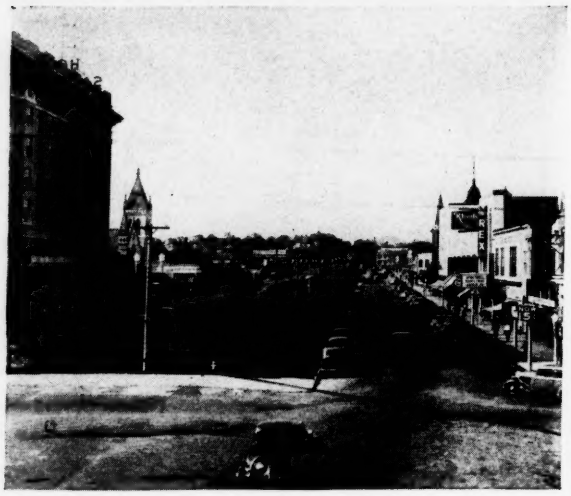
The famous "270" engine, power plant of the "Army's Workhorse," also powers GMC models in the 3-ton range. All other GMC gasoline engines are of the same basic, war-proved design.

THE TRUCK OF VALUE

GMC TRUCKS

GASOLINE • DIESEL

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION



Down In the City of Pensacola, Fla.

In Pensacola, Florida, you will find many modern Layne Well Water Systems. Check the city water works, big paper pulp mills, the Naval Air Station and auxiliary fields, Army Training Camp, the largest brewery, the ice plant, a wood chemical processing plant, and other industries. All have highly efficient Layne Well Water Systems. The same record of Layne installations applies to hundreds of other cities. The reason is more than obvious. Layne Well Water Systems are better designed, more efficient, sturdier built and of finer quality materials.

Layne Well Water Systems serve hundreds of cities, factories, railroads, mines and irrigation projects in all parts of the world—and consistently show the lowest upkeep cost of any well water producing equipment made.

The services of Layne Engineers, who are widely experienced in all phases of water production are available without cost or obligation. For further details, literature, etc., address Layne & Bowler, Inc., General Offices, Memphis 8, Tenn.

HIGHEST EFFICIENCY

Layne Vertical Turbine Pumps are available in sizes to produce from 40 to 16,000 gallons of water per minute. High efficiency saves on power cost.

AFFILIATED COMPANIES: Layne-Arkansas Co., Stuttgart, Ark. ★ Layne-Atlantic Co., Norfolk, Va. ★ Layne-Central Co., Memphis, Tenn. ★ Layne-Northern Co., Mishawaka, Ind. ★ Layne-Louisiana Co., Lake Charles, La. ★ Louisiana Well Co., Monroe, La. ★ Layne-New York Co., New York City ★ Layne-Northwest Co., Milwaukee, Wis. ★ Layne-Ohio Co., Columbus, Ohio ★ Layne-Texas Co., Houston, Texas ★ Layne-Western Co., Kansas City, Mo. ★ Layne-Western Co. of Minnesota, Minneapolis, Minn. ★ International Water Supply Ltd., London, Ontario, Canada ★ Layne-Hispano Americana, S. A., Mexico, D. F.

LAYNE

WELL WATER SYSTEMS
VERTICAL TURBINE PUMPS

Sound Financial Conditions

Intrinsic improvement in the fiscal strength of the South is vividly reflected by the unprecedented prices commanded by Southern municipal bonds and the sound financial condition reported by Southern state governments.

Reliable sources express the opinion that Southern municipals are now selling at all time high prices with correspondingly low yields. Records of actual recent sales bear out this impression.

On March 15, Jefferson County, Alabama, sold $3,000,000, 1.10 per cent Board of Education Warrants, due serially 1949-to-1970, at a net interest cost of 1.186 per cent. These were reoffered at yields ranging from .60 per cent for the 1949 maturity to 1.25 per cent for the 1970 maturity. On April 3, an issue of $2,295,000, 1 per cent, Dallas bonds were sold to a banking syndicate at 99.588, the transaction representing a net interest cost to the City of 1.04 per cent. On April 1, Tampa sold $500,000 Water Revenue bonds, due serially 1947-to-1966, at a net interest cost of 1.27 per cent. On April 4, the City of Williamsburg marketed an issue of $350,000, 1 per cent Water bonds, with average maturity of 15 years, at a net interest cost of .979 per cent. On April 8, an issue of $1,550,000, Lafourche Parish (La.) School District bonds, due 1948-to-1966, was taken by a banking syndicate at a net interest cost of 1.17 per cent. On April 9, the City of Lexington (N. C.) sold $500,000 Water and Sewer bonds at a net interest cost of 1.30 per cent. The bonds were reoffered at yields ranging from .60 per cent for the 1949 maturity to 1.35 per cent for the 1976 maturity.

As further illustration, the following more recent offerings compiled by Equitable Securities Corporation of Nashville confirm the attractiveness of Southern governmental issues:

State of Alabama, 4½ per cent bonds, due in 1959, 1.00 per cent basis; City of Louisville, 2 per cent bonds, 1965, .95 per cent; New Orleans, 4½ per cent, 1965, 1.25 per cent; Baltimore, 3½ per cent, 1964, 1.05 per cent; Mississippi, 5½ per cent, 1952, .60 per cent; North Carolina, 4¾ per cent, 1963, 1.10 per cent; Durham, 4½ per cent, 1952, .70 per cent; Oklahoma City, 1 per cent, 1967, 1.10 per cent; South Carolina, 2¾ per cent, 1950, .70 per cent; Nashville, 1 per cent, 1970, 1.00 per cent; Richmond, 1 per cent, 1964, .90 per cent.

The State of Arkansas has operated on a cash basis since 1934, and since that date has reduced its indebtedness by about $43 million. The State of Mississippi has operated on a cash basis since 1932 and has provided a 100-per cent sinking fund for all its general obligation bonds, with the result that its Highway Revenue bonds secured by gasoline tax receipts are its only outstanding debt. North Carolina has reduced its indebtedness by more than $70 million since 1934 and last year its Legislature appropriated from surplus a sinking fund equivalent to outstanding General Fund bonds of approximately $50 million. Tennessee has reduced its debt by more than $50 million since 1937 and has provided for retirement of remainder.

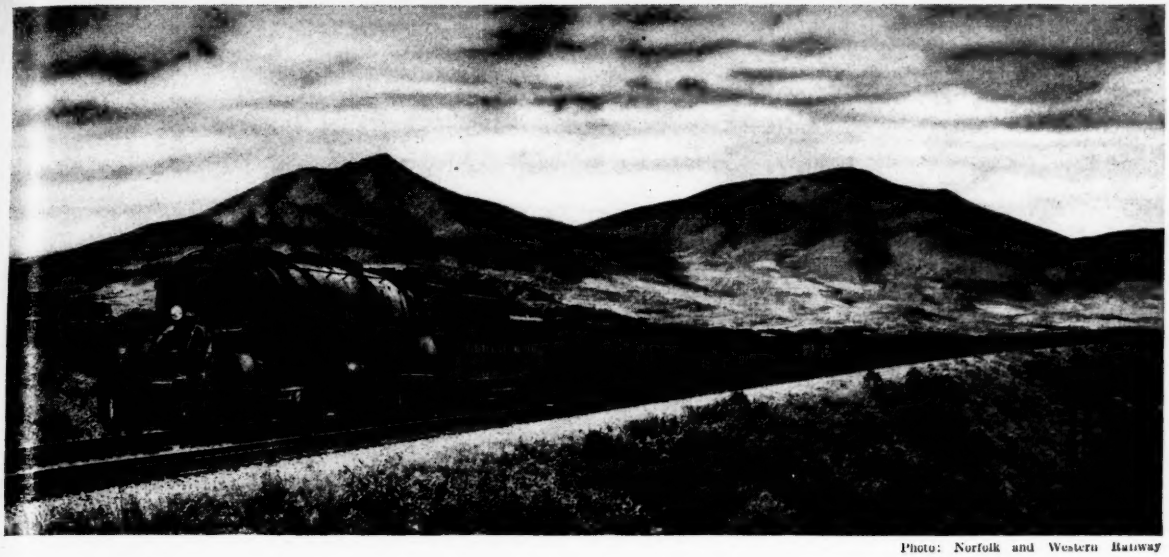


Photo: Norfolk and Western Railway

If all the unmined coal in the one state of West Virginia were loaded into 60-ton gondolas, it would make a solid train encircling the earth 600 times.

THE SOUTH'S MANUFACTURING PROGRESS BASED ON ITS ABUNDANT NATURAL RESOURCES

COAL

The South is peculiarly fortunate in its fuel resources. It mines about 50% of the nation's bituminous coal; and geologists estimate that the South's bituminous resources will last 3,000 years.

West Virginia leading all American states in bituminous production, accounts for 55% of the South's total, with other Southern states in the following order: Kentucky, Virginia, Alabama, Missouri, Tennessee, Oklahoma, Maryland, Arkansas, Texas, Georgia and North Carolina.

In the nation's economy, coal is basic to American industry: railroads and ships, iron and steel manufacturing, rolling mills, motors and cars. Many mills and plants rely on coal almost wholly for their processing, steam and electric power; our cities and homes, factories, hotels, apartments and stores for light and heat.

Coal's contribution to chemistry is extensive, making possible thousands of synthetic products for household and industrial uses; miraculous life-saving drugs and medicines, and the amazingly popular nylon products. With coal as a base, scientists are developing still other formulas opening new vistas for industry.

Many new manufacturing plants, branches and extensions being established in the South are influenced directly or indirectly by the editorials, articles and advertisements in this publication. They create sales opportunities for manufacturers of the nation, no matter where located.

Its advertising pages offer an exceptional opportunity to manufacturers prepared to supply the needed machinery, plant equipment, power and base materials.

MANUFACTURERS RECORD

BALTIMORE 3, MARYLAND

NEW YORK CHICAGO CHARLOTTE CLEVELAND

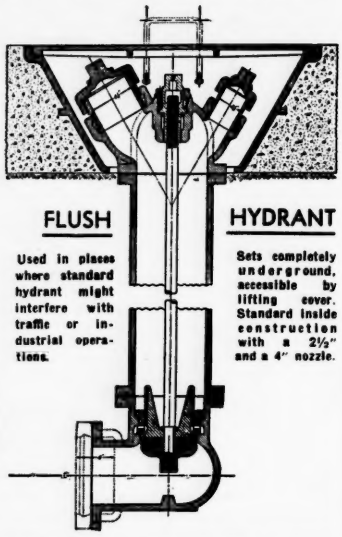
WHAT ENRICHES THE SOUTH ENRICHES THE NATION

Rugged!
Dependable!

VALVES
HYDRANTS
and pipe line accessories

Gate Valve

Check Valve


FLUSH
HYDRANT
Used in places where standard hydrant might interfere with traffic or industrial operations.
Sets completely underground, accessible by lifting cover. Standard inside construction with a 2½" and a 4" nozzle.

M & H GATE VALVES are cast iron body, bronze mounted, with double-disc parallel seat or solid wedge type, non-rising stem or outside screw yoke. They come either with flanged or screwed connections. Valves for fire protection lines are marked "UA-FM" to denote approval of both the Underwriters and the Factory mutuals.

M & H FIRE HYDRANTS are revolving head, dry top, bronze mounted. They also are approved by "UA-FM". Entire main valve assembly is removable through barrel without digging. Special Traffic Model is fitted with breakable bolts and stem coupling, designed to break at ground under impact. Repairs are made simply by renewing bolts and coupling, without shutting off the water.

M & H PRODUCTS INCLUDE

FIRE HYDRANTS
GATE VALVES
TAPPING VALVES
WALL CASTINGS
SPECIAL CASTINGS
TAPPING SLEEVES
CHECK VALVES
FLOOR STANDS
EXTENSION STEMS
SHEAR GATES
MUD VALVES
VALVE BOXES
FLAP VALVES
SLUDGE SHOES
FLANGE AND FLARE FITTINGS
FLANGED FITTINGS
B & S FITTINGS
CUTTING-IN TEES

M & H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

Strikes and Wage Increases Cause Railroad Deficits

In a statement supplementing the 1945 annual report of the Baltimore and Ohio Railroad, which was recently mailed to stockholders, Roy B. White, president of the road, points out that disturbing factors have entered the railroad situation during the last few months.

"The Baltimore and Ohio had a net income of nearly $16,000,000 for 1945," Mr. White said, "and it now appears that for the first four months of this year we will have a $13,000,000 deficit.

"There are two principal causes for this," he continued. "First is the large loss in revenue brought about by the major strikes which began last November and resulted in virtual stoppages in the automotive, steel, electrical appliance and related industries.

"And now," he added, "the bituminous coal industry, which is almost as basic to American business as the railroads, is producing but a bare fraction of normal needs."

Mr. White stated that the effect of last year's major strikes became serious in the B & O's income account in January of this year. Strike settlements enabled the road to make a substantial recovery in March, but the loss of bituminous coal tonnage already suffered during April, with added losses in the loading of steel, ore and other commodities, indicates that the deficit will run higher for this month alone than for the entire first quarter.

"The second cause of the deficit," Mr. White continued, "is the wage increase recently awarded railroad employees. This, it is estimated, will cost the B & O $28,000,000 for the current year. The increase is retroactive to the first of this year, and, prorated over the first four months, will bring total net deficit for this period to $13,000,000 or more."

Another disturbing factor, he added, is the steadily increasing cost of materials and supplies, it being estimated that 1946 operating expenses on this account will be $6,000,000 more than in 1945.

"It is obvious," Mr. White emphasized, "that the only way to insure the solvency of the railroads under private ownership and management, is through a substantial freight rate increase, and to this end the railroads have already submitted their petition to the Interstate Commerce Commission. I believe that as soon as our labor questions are settled, we can confidently look forward to a period of great business activity in this country, but regardless of the volume of business it is clear now that we cannot operate on our present rate basis and that it will be necessary to grant the railroads not less than a 25% increase in freight rates, and possibly more."

LOOKING FOR A HOME?

Starry-eyed couples are having a tough time finding homes these days . . . but down-to-earth industrialists seeking plant locations are in luck. There is plenty of room in Norfolk and Western territory, that vast rich area between the Midwest and the Virginia Seacoast . . . and midway between the North and the South . . . plenty of room for industries to locate, grow and expand. Here are raw materials and natural resources galore, an abundance of pure water, ample power and highest-quality all-purpose bituminous coal, intelligent native labor, a tax policy that's friendly to industry, plus the Norfolk and Western Railway's unexcelled rail service and the ice-free year-round Port of Norfolk which put you right next door to domestic and world markets. And, when you locate in N. & W. territory, you will find congenial people to live with, good schools for the children, scenic beauty, mountain and seashore resorts, and a climate that is mild and healthful. If you are an industrialist looking for a home — an ideal place to locate or relocate your plant — you will find it here.

Hundreds of industrialists have already discovered the numerous advantages of this important territory. For detailed and confidential information, write to the Industrial and Agricultural Department, Norfolk and Western Railway, Roanoke 17, Virginia.

Norfolk and Western
RAILWAY
FOR BETTER PLANT LOCATIONS

AN OPPORTUNITY FOR

FOOD PROCESSORS

RESOURCES?

Abundant crops of fruits and vegetables from 12,387,000 farm acres; a rich catch of fish and shellfish from 236 miles of coast line, many bays and rivers. This year the leading farm crops include peaches, sweet potatoes, watermelons, cabbage, lettuce, cucumbers, tomatoes, asparagus and beans, but practically every crop that grows in the temperate zone can be produced profitably.

MARKETS?

Nearby cities of the East and Midwest are the great, logical market for South Carolina food products. Highly developed shipping facilities via rail, air, ship and truck lines.

EXTRAS?

Plenty of them! South Carolina vegetables are famous for iodine content . . . hundreds of suitable plant sites to choose from . . . plentiful, intelligent, native-born labor . . . moderate tax and power rates . . . genuine friendliness from officials and plain citizens alike. For a detailed study of the food processing possibilities in South Carolina, write State Research, Planning and Development Board, Dept. E, Columbia, S. C.

South Carolina

WHERE RESOURCES AND MARKETS MEET

Federal Employe Trends Continue Upwards

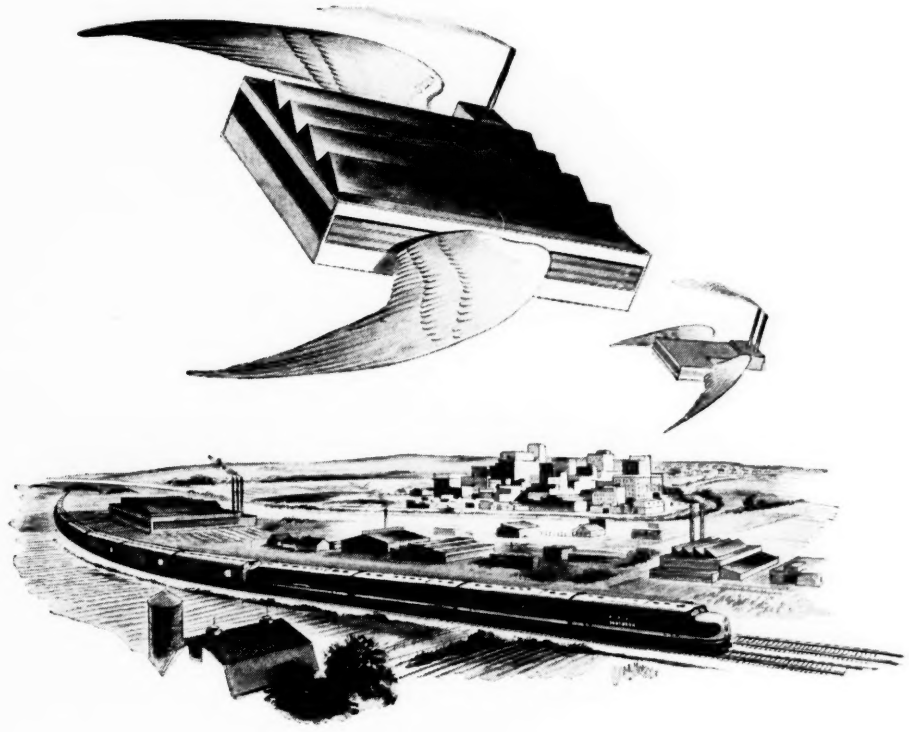
According to Federal personnel reports submitted to the Joint Committee on Reduction of Nonessential Federal Expenditures during the month of March, the trend continued in which reductions in the war agencies were off-set by increases in the old-line establishments. Thus, although total employment, both continental and abroad, decreased 48,164 from the February total of 2,921,673 to the March total of 2,873,509 actually if the War and Navy Departments and the National War Agencies were excluded from the total, personnel increased 34,078 during the month.

Within the United States this trend is most apparent. Total personnel inside the United States decreased 24,106 from the February figure of 2,406,227 to the March figure of 2,382,121, but exclusive of War and Navy Departments and the National War Agencies, the remaining 41 agencies had a net increase of 34,297 during the month. Within this group, 24 agencies increased their personnel during the month and 14 effected reductions. Three show no change. The agencies which had the largest increases were Veterans Administration with 18,224, Post Office with 7,471, Reconstruction Finance Corporation with 3,583, Treasury Department with 2,326, Interior Department with 1,412, and Commerce Department with 1,034.

The War and Navy Departments effected a reduction of 57,161 within the continental United States and a net reduction of 23,786 outside the continental United States. Included in this reduction are 58,469 industrial employees formerly engaged in direct war production. The remaining war agencies released 1,295 employees.

Recently I submitted to the Congress a Postwar Federal Personnel report covering the 5 month period following V-J Day. At that time I pointed out that since V-J Day, exclusive of War and Navy Departments, the old-line establishments had increased 86,822. I now wish to call your attention to the fact that during February these agencies had an increase of 32,059 and during March 34,078, making a total increase of 152,959. This increase in personnel substantiates my past belief that the trend of off-setting reductions in the war agencies with increases in the old-line establishments must not be lightly dismissed. Public statements by authorized officials as to planned reductions in Federal employment further substantiate the fact that the old-line agencies, most of which were geared to the war effort, instead of releasing such employees, are constantly increasing their personnel. Though the Federal payroll may be but a small portion of our annual expenditures, its reduction would be an indication that a balanced budget is planned by the President and Congress.

Senator Harry F. Byrd.



One-Way Migration

For sound and compelling reasons, more and more industries are coming South . . . joining the *year 'round, one-way* migration of industry to this land of opportunity unlimited.

Industrial leaders realize that mild climate permits "all the year" operation, and offers real savings in plant construction and maintenance costs.

Purchasing agents and production managers know the importance of nearby and abundant raw materials, and low-cost power, fuel and water.

Personnel managers appreciate the value of an ample reservoir of skilled and unskilled workers who are ready, eager and able to perform the myriad tasks of modern industry.

Sales managers see the South's great consuming market with its steadily increasing purchasing power.

And traffic managers know they can rely on the 8,000-mile Southern Railway System for all-weather, efficient, economical mass transportation service to bring supplies to the factory and to take finished products away.

No wonder industries are migrating here *to stay*, after they *"Look Ahead—Look South!"*

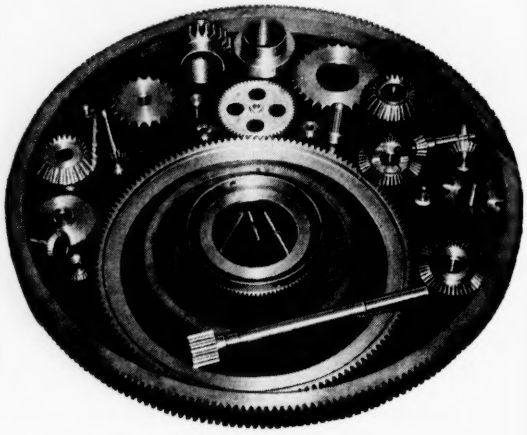
Ernest E. Norris
President

LOOK SOUTH LOOK AHEAD

SOUTHERN RAILWAY SYSTEM

The Southern Serves the South

GEARS
IN GREAT VARIETY



You will recognize the precision gears pictured above in wide variety . . . from the 36-inch ring gear for gun turrets to the tiny camera-operating gears. Between these are aileron "flipper" gears, bomb bay mechanisms and cargo hoist gears. ALL made for accuracy and durability by SLAYSMAN. Our industrial gear manufacturing facilities have been greatly increased to supply the demand for our varied services. A newly instituted Slaysman service is that of aeronautical gearing and transmission . . . bringing you the newest designs in WIDE VARIETY.

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Socialized Medicine

For the first time in the current debate on socialized medicine, brought to a peak by the proposed Wagner - Murray - Dingell bill, an authoritative speaker has presented a Catholic theological view of compulsory government medicine. The following paragraphs are from an address delivered recently by the Rev. Alphonse M. Schwitalla, S.J., dean of the St. Louis University School of Medicine, before a meeting sponsored by the National Physicians Committee for the Extension of Medical Service.

"Health care is the individual's responsibility," said Father Schwitalla, "which, within the limits of his circumstances, his finances and his strength, he must carry for himself and his dependents. This is the real ethical basis of the patient-physician relationship.

"On account of social conditions, however, and their personal limitations, society's resources must be called on to assist the individual in carrying his basic responsibility without releasing the individual of that responsibility unless he becomes incompetent to carry it.

"Government, as an agent of society, must sometimes step in to facilitate society's functions in health care, not as a substitute for, but only as an aid to, the individual's efforts. Hence government does not assume the individual's responsibility, but only facilitates the exercise of that responsibility.

"This principle makes any form of compulsion in health care irrational and indefensible and, I would say, unethical.

"Government, or positive law, can re-state and re-emphasize a basic responsibility and in that sense stress the individual's obligation, but the individual must remain free to choose the manner in which he carries his basic responsibility.

"Government participation in the health care of the individual should be regulated by the same principles and viewpoints as ethically purveyed by the individual's relationship. When the need arises through the individual's disability, the government units nearest to the individual should first be called on for help. If then the problem is too great for local government to solve, the larger units of government—at first the state units and then the federal units—are involved, always emphasizing the thought that, as far as possible, the individual's responsibility for his own health care and that of his dependents must be safeguarded by himself as far as possible. Hence local responsibility takes precedence over state responsibility, this over federal, in assisting the individual.

"Thus far there is no evidence that local responsibility and the state are incapable of coping with the problem of personal health. The wide variety of plans by which the individual may carry his responsibility for health care makes unnecessary any federal monopoly of the aids by which the individual is assisted in living up to his responsibility."

"What Enriches the South Enriches the Nation"

"THE PUBLIC BE DAMNED"

A royalty for the union from coal production, demanded by John L. Lewis, is nothing less than usurpation of the government's power of taxation.

This issue injected by the high potentate of the miners is probably the most insidious of a number of revolutionary proposals set forth by labor unions since the end of the war. It goes far beyond the realm of collective bargaining. It not only constitutes an invasion of property rights but even infringes upon the functions of government itself.

The similarity of royalty extortion to tax collection is pointed out by none other than Harold Ickes, who by no stretch of the imagination could be labeled an adversary to radical concepts. The comparison would be less striking did it come from other than a staunch New Dealer. This proposal of Mr. Lewis transcends even New Deal fantasies.

Mixed up with the fundamental danger of the proposition is an element of hypocrisy that could come only from a callous exploiter of both worker and public. Ostensibly the project is for the benefit of the mine workers—to provide hospitalization and similar service. Actually it is nothing more nor less than a scheme to augment swollen union war chests for further inroads on the public purse.

What guarantee is offered that such a fund would be used for its alleged purpose? Who doubts that if the Miner Boss wins his contention, all other unions will at once make similar demands? Who can deny that all other industry would be hard put to resist such similar demands from their respective unions? Who can foresee the lengths to which the process might be projected? The answer to all these questions is—no one. Be the present demand for a five cent royalty per unit, a ten cent royalty, or any royalty at all, the way is paved for selfish exploitation of the public that would have no tangible limitations.

The above would be true if the proposal were made in good faith. But that the proposal is not made in good faith is evidenced by union refusal to consider cooperative handling of the fund to be accumulated. They want it all within their own grasp. Those who will have contributed are to take no part in distribution or administration.

National legislation should be passed to proscribe all such proceedings as those proposed by Lewis. A more subtle threat to American institutions is involved than any that heretofore has been posed by union demand. A great present danger is that the public may be beguiled into a false idea of the situation. There are few Americans who would not be willing to pay a few cents a ton more for their fuel if it meant the saving of thousands of lives as Lewis deceptively alleges. As in the case of many another bogus philanthropy, the public may fall for the scheme.

The mine operators face more than a collective bargaining issue. They face the responsibility of protecting the American public from its own possible gullibility. The fact that mine operators stand to lose nothing in dollars and cents, since this is one assessment against operation that would be unquestionably passed on to the consumer, should not lessen their moral stamina. It will be to the credit of the industry if those who have the resolution of the controversy in their hands stand firm for their convictions and protect the consuming public from a clumsily, but cleverly concealed fraud.

Southern Optimism High

There is sound foundation for the growing optimism that prevails in the South. Practically every index points to better things ahead.

To analyze the factors making for widespread progress in the South, it is well to bear in mind that these fall into two classes: those that belong to the long-term trend—the inherent factors; and those which are of immediate significance—the dynamic factors.

Of the first, Southerners as well as others have long been aware. They embrace the inherent strength of the region, both material and human. They include the abundance and diversity of natural resources and the favorable environment for physical growth of all kinds. They also include the inherent strength of the inhabiting race and the cultural environment that has enabled the race to bear up courageously under stern handicaps and to push ahead doggedly against great odds.

These long-term factors are not to be discounted. They are the fuel that will continue to nurture the flame of progress. Their emphasis, however, may have dimmed somewhat the realization that the flame itself has taken on dynamic qualities; that in the collective mind of the South, resolution has been augmented by exhilarating confidence. It is as though a basic dogma had been changed from We Should to We Can.

How much this change has been due to the war, how much to normal development, may long be a matter for conjecture. The war unquestionably contributed productive facilities and productive skills that otherwise might have emerged less rapidly. It is also true that the war added considerably to the accumulated capital of the South through increased income for Southern enterprise and individuals.

On the other hand, all Southerners know that the war merely accentuated a trend that was already under way. The decade before the war was a crucial period for the whole world. It was a time when most nations either marked time or experienced the throes of industrial and social retrogression. The greater part of the United States itself can scarcely claim to have gained ground during that decade. Yet the South can point to that period with considerable pride. In the present mechanical age, factory payrolls are accepted as a prime index of economic advancement, stagnation or retrogression. Just prior to the outbreak of war, factory pay rolls in the South were twelve per cent above 1929 levels. In the rest of the nation they were seven per cent below those levels. Most of the remainder of the world was experiencing the pangs of poverty and the bitterness of frustrated effort.

Today, the signs of Southern rennaissance are even more unmistakable. These signs are apparent both within and without the South. Within, Southern enterprise is not questioning potential demand. It is pushing plans to expand production. The number of new business charters being issued by Southern states is phenomenal. Many of these charters are for outside capital, eager to become a part of a powerful and prosperous industrial empire. These the South welcomes. The door is open. But by far the greater number of these businesses to be are of Southern origin, launched by Southerners, backed by Southern capital.

To speed expansion, Southern cities, towns and communities are throwing their full weight behind these new enterprises. More than this, they are projecting municipal improvements unsurpassed by any region during any era, in order that growing enterprise may flourish under the influence of pleasant and convenient surroundings. In many areas, community trust funds are being established to perpetuate civic betterment on a sound financial basis and to make sure that future needs arising from new growth are adequately met.

Southern universities and colleges have put their shoulders to the wheel. They are contributing important research centers and installing new courses of instruction in order that enterprise may have the benefit of improved material and human development.

Southern railroads have launched unprecedented programs for roadbed and equipment improvement. Southern power plants have blueprints drawn for vast enlargements.

From without, the indication of Southern progress is equally convincing. During recent months, publications and economic forecasters, the foremost of the nation, have joined in paying glowing tribute to the prospects of the South. The flow of outside capital into Southern lands and equities furnishes even stronger evidence.

Taken together, these manifestations from within and without cement the conviction that the South has become the Number One Opportunity of the World. The South progressed while the rest of the world was depressed. That progress now is developing into a preeminence that may well serve the world as a guide to better ways of life.

Rent Control Retards New Housing

What good is a rent ceiling to the family that can't even find a place to rent? About as much good, we believe, as a price ceiling on the butter that isn't on the grocers' shelves. Many people otherwise opposed to price and other artificial controls say "but let rent controls continue; they are necessary." Not only are they not necessary, they are intensifying and prolonging the housing shortage.

The administration has taken the attitude that all landlords are gougers, and has acted accordingly, when actually the percentage of chiselers and crooks among landlords is no greater nor less than you will find among any other group of people. As a result of this government misconception, all regulations have been anti-landlord. The landlords can collect just so much, they can evict only on so much notice, they have to do this, that, and the other thing.

Most important of all, under current directives they find it well nigh impossible to make a moderate return on investment. If people are homeless, they are willing, nay glad to pay the price for a place to live. The evidence for this is contained in the classified column of your daily newspaper, where people offer rewards for information leading to apartments or houses.

No matter how desperately housing is needed, no one wants to become a landlord. Even were materials plentiful, intelligent businessmen would not build houses for rent. If rent controls are abolished, rents will rise and stimulate building for rent. This rise will also stimulate home building for owner occupancy. Many people, with ample means to own their own homes, are tenants now. Landlords, present and prospective, will be encouraged to invest in more and more dwellings, and the immutable law of supply and demand will soon result in fair rents and will alleviate the housing shortage at the same time.

The problem must be solved by more housing, not by cheap rents for no housing.

We All Lose

Popular opinion has finally begun to accept the fact that it is the general public who are the large losers in any prolonged labor dispute. Management has been trying to get this proposition across for some time; labor has striven mightily to becloud its truth. But the straphanger on the streetcar and the man behind the plow are now waking up to the fact that, when a big strike is called, whether higher wages and resultant higher prices ensue from its settlement or not, they will bear a large part of the burden that it occasioned.

But how? This isn't always made too clear. For one thing, there will be more taxes. Our government, if it is to remain solvent, must operate on the money it collects in taxes, direct and indirect, from all of us. If expected taxes fail to materialize from one source, other sources must be tapped. Thus when a large corporation is struck against, the workers are earning no wages and paying no income tax. Correspondingly, the corporation is earning no profits, and paying no corporation taxes. The money must be made up out of the pockets of the rest of us.

Nor are taxes the only factor. Since the GM, steel and coal strikes all slow down the delivery of new automobiles, consider an example that those industries affect. A man who is accustomed to buy a new car once every five years finds, because of the war, he is now driving a ten-year-old model. The car drinks oil, breaks down every other week, and is thoroughly unsatisfactory. The man wants a new car and can afford it, but he can't get it. His only course is to patch and pay, holding his wreck together with chewing gum and hairpins and paying enough for the continuous repair jobs to meet the payments for the new car he wants and can't get.

Yes, labor and management both lose in a long strike, but the average man who sits on the sidelines doesn't come off much better.

Perverted Taxes Fatal

Taxation is an essential government power. It is legal confiscation and as such is the power to destroy. It goes without saying that a government, so minded, can eliminate existing institutions or foster new ones through its power to tax. Taxation can be perverted from its fundamental purpose and be made a potent force for so-called social reform. Over the past decade this unquestionably has been done.

Waiving the moral aspect of interpreting taxation as a proper vehicle for social reform, it is not so easy to ignore the practical effects of such an interpretation in the light of the present fiscal situation of the United States. The public debt has become so large that for an indeterminate period it will be necessary to realize a maximum volume of federal revenue for absolutely essential expenditure. Maximum tax revenue can only be had from the proceeds of maximum production. There is no other enduring source. In the short run, taxes might be levied on accumulated wealth. Our sovietized termites have not yet openly advocated this recourse. Whether it be that they dare not, or still have circumspection enough to realize its futility, is an unanswered question. What is more to the point is that they advocate the same thing, substantially, when they foster taxes that would prohibit or restrict future accumulation of wealth. Whether it be unrealized, or purposely ignored, the fact exists that wealth curtailed is eventually wealth destroyed.

Wealth is neither money nor equities. It is the tangible, usable end-product of production. Whether it be in the form of productive or consumptive goods, durable or non-durable, is a question of degree. The durability of wealth has limits. It is not static. It is ever changing. New wealth must constantly replace that which is consumed or depleted or worn out by use. Were it not so replaced, money and equities would become mere figures on pieces of paper. Means of production, the source of new wealth, would return to Stone-Age methods. The springs of tax revenue would dry up. The power to hinder accumulation of wealth is the power to destroy accumulated wealth and to reconvert the wheel of progress to the sledge of barbarism.

Even if no other reason existed, the magnitude of the public debt should preclude any thought permitting taxes to impede the means of production. The public debt represents a mortgage against every home, farm, mine and factory in the United States. The stability of the nation depends upon orderly reduction of this obligation and public confidence in ability to pay interest on the unliquidated portions. The only source of revenue that will make this possible is in maximum production with its concomitants, maximum employment and return on investment. Incentive for maximum production is food for the goose that lays the golden eggs. Taxes levied for any objective other than essential revenue will result in the destruction of America as we have known it and as we want to leave it for generations to come.

Fort Worth skyline from the West.

Fort Worth's Reconversion Problems Likened to "Growing Pains"

by
Carson W. Davis

Already a live stock center, city emerges as growing airplane producer

RECONVERSION pains—predicted by many experts to be drastic—proved to be but "growing pains" for Fort Worth, Texas. The state's third largest city, long known as the beef crossroads of the cattle country, has emerged from a wartime boom into a stable industrial and manufacturing center of the Southwest, basing its new industrial prominence on airplanes.

Back in the days when gun totin' grizzled cowhands drove the Longhorn steers through the junction of the Clear Fork and the West Fork of the Trinity River, the city founded itself as a cattle center. Today Fort Worth still holds first place in the South for the bovine business and the city remains the nation's fourth largest meat packing center; but production of "the flying machine" has wrested the industrial blue ribbon from the staid cattle industry.

Leader in the heavier-than-air manufacturing is Consolidated-Vultee, which during the war became the city's largest single user of manpower. Today, that company maintains its wartime first place as employer of the largest number of persons, despite a sharp reduction in workers at the war's end and has plans to expand in the next two years with the output of the giant B-36, 204-passenger Garguantuan plane, now under construction. Convair's plant itself is mammoth in size and described "as big as all outdoors."

While Convair rivets away on mammoth ships for airline use three other companies are swinging into production of private airplanes for individuals. Globe Aircraft Corpo-

ration is scheduled to deliver 4,000 of the sleek, two-place Swift, single engine low-wing monoplane by the end of 1946. This action is a quick swingover to the company's plans just before the war when they were starting production of the ship, and cut it off just as swiftly to enter into war production.

Following V-J Day the company slashed its employe payroll, and since has gradually built it back to 1,200 persons working with more than 3,600 tools in making the convenient private Swift, powered by either the four-cylinder, 85-horsepower Continental or the six-cylinder, 125-horsepower Continental engine. The company has a backlog of more than $15,000,000 in orders for the ship.

Johnson Aircraft Company is helping to fill out the more than 8,000 persons now employed in the city's aircraft manufacturing industry by turning out the powerful and fast new three-place Rocket ship. The company is expanding this year to increase its output and subsequent payroll from the present 500 employes to more than 1,500, in an effort to meet the nearly $5,000,000

(Continued on next page)

Above—Interior of the Burruss Mill & Elevator Co., where a substantial part of the Texas bumper wheat crop was processed into flour for both domestic and foreign consumption.

Below—Scene in the mile-long Consolidated-Vultee plant. Largest manufacturing enterprise in Texas, the plant is now building the world's largest land-based aircraft, the 10,000-mile range, six-engine B-36 superbomber, for the U. S. Army Air Forces.

in orders for the plane now on hand.

Claimed jointly by Fort Worth and Dallas, and located almost halfway between the two cities is American Eaglecraft Company soon starting production of the improved American Eaglet private airplane.

Upholding, not only from past tradition but present expansion plans, its part of the billion dollar West Texas market surrounding Fort Worth is the cattle and meat packing industry. For years Fort Worth ranked fourth in the nation as a packing center, is the South's largest and follows closely behind the aircraft industry with employment of more than 6,000 persons.

In the marketing of sheep the city has wrested first place from the nation's other packing centers.

Largest single firm in the business is the Swift & Company plant which is that organization's second largest outlay; and the plant of Armour & Company is nearly as large.

Yards of the Fort Worth Stockyards Company cover more than 80 acres, with adjoining horse and mule barns serving 43 commission companies, which together with 75 special buyers are all bonded and registered with the federal government.

Closely correlated with the packing industry is the city's grain storage and milling facilities—largest

(*Continued on page* 66)

Above — Producing barbecue utensils at the Crown Machine and Tool Company.

Left—Section of Globe Aircraft Corporation's final assembly line, where the Swift GC-1A is being produced. With a backlog of $19,000,000 in orders, the company plans to turn out more than 4,000 Swifts this year.

Below—Vienna sausage packing department at one of Fort Worth's newest plants—Archer Products, Inc.

From Bombs to Beauty

by

John Mebane

THIS is the story of how a Georgia-born product has just become the toast of Broadway, or of how the ingenuity of a little group of Southerners has enabled a remarkable job of reconversion from bombs to beauty—and at a handsome profit.

The story actually begins 55 years ago when Dr. T. H. Wynne, Sr., a resident of Griffin, Georgia, built a fine watch, piece by piece and every piece by hand. That set up the Wynne family in the watchmaking business.

For years father and sons remained in the watch and jewelry business in a modest little establishment at Griffin, earning an increasingly important reputation as fine craftsmen in metals, glass and gemstones. Then came the attack on Pearl Harbor and an urgent request from the War Department, asking the Wynnes to establish at the earliest moment a plant manned with personnel capable of manufacturing precision instruments for use in the war. The work required craftsmen who could work within measurements of less than one-millionth of an inch.

The Wynnes cast about. The only workers available were those who lived around Griffin. Could they be trained as the skilled craftsmen the government needed? The record of the Wynne Precision Company—which was the name then adopted—speaks for itself.

During the following three years, this strictly Georgia company produced approximately one-quarter of a million completed units of the highly technical instruments, and it found its Georgia labor equal to any in the nation.

Then came V-J Day, and the necessity for reconversion. The Wynnes cast about for a peacetime product and decided to manufacture an unusual line of fishing tackle on a large scale, specializing in deluxe fishing flies and other items of fishing tackle. These were marketed under the trade name of "Ol' Skipper."

The Wynnes themselves became more and more intrigued with their fishing flies. The sparkling brilliance of some of their lures gave them a new idea. Why not combine two of the oldest crafts of man—the skilled craftsmanship of creating fish lures with the artistry of making jewelry?

The idea jelled, and the result is a series of handmade decorative costume pins which resemble miniature fish lures made entirely by hand and involving 27 distinct steps in the manufacturing process.

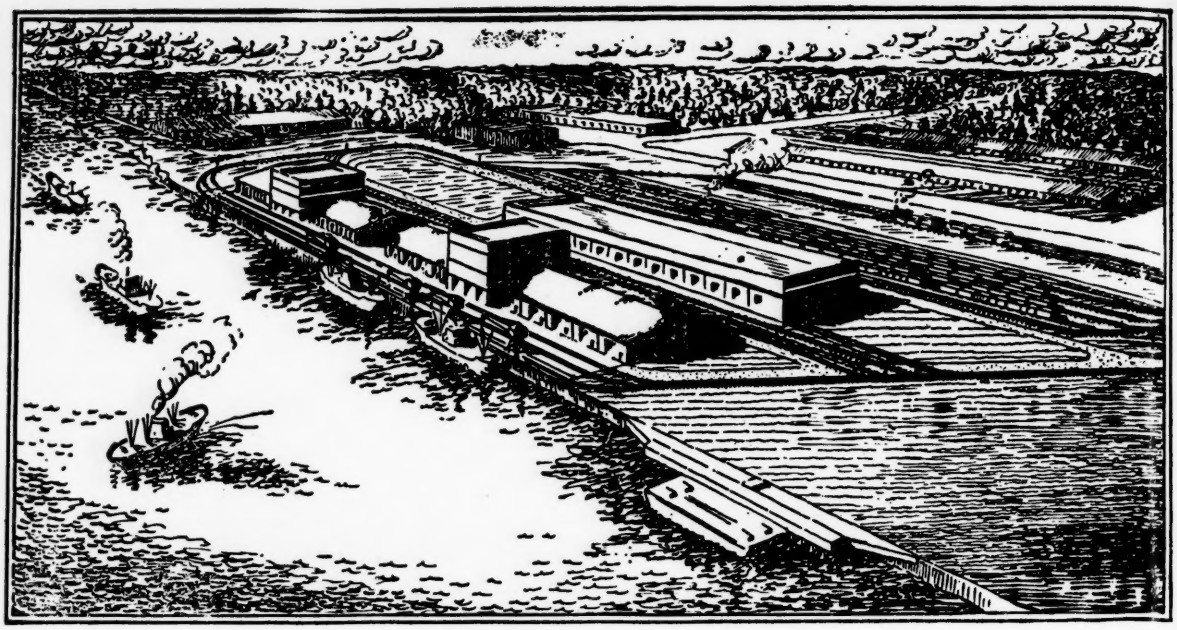
The Wynnes have achieved some amazing color combinations in utilization not only of famous old fishing fly patterns but in a variety of their own original designs. The pins are made of sterling silver and choice feathers. The Wynne feather collection contains several million feathers, including many rare and expensive ones, gathered from over the world.

Many of the brilliant color combinations were suggested by the designs of nature itself.

The new product became an instantaneous hit. The Wynnes landed a fat order from R. H. Macy & Company. Women's and fashion magazines expressed intense interest. Orders now are beginning to pour in from throughout the nation. A large Atlanta department store featured a huge collection of them just in time for Christmas. In a single day orders came in from large stores from Pennsylvania to Florida.

Marketed under the trade name A:Lure, the pins have received praise from stylists and fashion editors all over the country. Commented one: "A conversation piece will probably attract more com-

(*Continued on page* 81)



State port terminals proposed for Georgia.

Savannah Gets $13,000,000 Industry Plans $4,000,000 Water Supply

by

Robert M. Nelson

SIXTEEN million dollars of investments in Southern territory were assured when on April 1st, Southern Paperboard Corporation filed its deed from Port Wentworth Corporation conveying a 180-acre site at Port Wentworth, Savannah, Ga. on which it will build a huge pulp and paperboard mill as soon as materials and equipment are obtainable. Of this amount, about $9,000,000 will be expended on the mill and about $3,000,000 for timberlands and working capital. The other $4,000,000 will be expended by the City of Savannah for the construction of a new industrial water supply having an initial capacity of 35,000,000 gallons per day, of which the paper mill will take 10,000,000 gallons daily.

Southern Paperboard Corporation is controlled through majority stock ownership by the Robert Gair Company, Inc., whose general offices are in New York. The minority interest is owned by the Fort Wayne Corrugated Paper Company, with head office in Fort Wayne, Ind. The mill will produce about 450 tons of paperboard per day which will be shipped to Northern fabricating mills of the two companies for conversion into container products. At least 650 persons at the start.

Robert M. Nelson

Southern Paperboard Corporation has also organized a wholly owned subsidiary, Gair Woodlands Corporation, with a paid-in capital of $2,000,000, which will carry on wood and land operations incident to logging the mill. Large timber acreage has already been obtained by the Gair interests. It is estimated that over 5,000 cords of pulpwood per week will be delivered to the mill, thus giving added employment to men in the woods and in the transportation services.

The location of this mill in the Savannah area was made contingent upon the City of Savannah agreeing to construct the industrial water supply plant and to complete the job by the time the mill is ready to take its 10,000,000 gallons daily. For many years city officials had planned for a new water supply. Ground sources were being depleted by excessive pumpings for expanding industrial purposes, and, furthermore, the hard artesian water is not suitable for certain types of manufacturing processes.

Underground sources have provided the major supply of water in

Georgia and the Southeast for many years. This, however, is artesian water, the principal aquifers being limestone of the Eocene and Oligocene ages. At Savannah, the top of the limestone lies about 220 feet below sea level. Since the establishment of pulp and paper mills at Savannah and Brunswick, the increased pumpage has reduced the water level at Savannah 50 feet or more below the original piezometric surface of about 37 feet above mean sea level. Hence, to avoid the possible contingency of the fresh water becoming contaminated by salt water, it became necessary to find another source for large industrial users.

Artesian water is hard, as it contains mineral compounds of calcium and magnesium. It is necessary to treat hard water for many industrial uses.

The new plant will obtain its water from a tributary of the Savannah River located several miles up the river from Port Wentworth, well beyond the point at which salinity occurs. The raw water will be pumped through huge conduits to an elevated area in Port Wentworth, where the filtration plant and storage reservoirs will be located. From there a main conduit will be laid for pumping filtered water to the new mill and to various other industrial plants located in the 8-mile area between Port Wentworth and the City of Savannah.

Several existing plants are expected to take advantage of the opportunity thus afforded to switch over from artesian to the new supply. The City of Savannah has agreed to take a substantial quantity from this source until other industries have contracted for the major part of the unsold excess. The filtered water will make available a large supply of clear, soft water which is ideal for use chemical processing where purity is an absolute prerequisite.

Site of the new mill is part of a 500-acre tract originally granted by the British Crown, in January, 1756, to Stephen Adjie and Anthony Fahie. The property became known as a part of Coleraine Plantation. In January, 1817, John Potter acquired the Coleraine and other contiguous properties and soon thereafter a large part of what is now Port Wentworth became known as the Potter Plantation. Mr. James Potter had acquired nearly 5,000 acres in this vicinity, whose Plantation residence on the Coleraine tract is described in the old records as "a very handsome one and superior to any on the river."

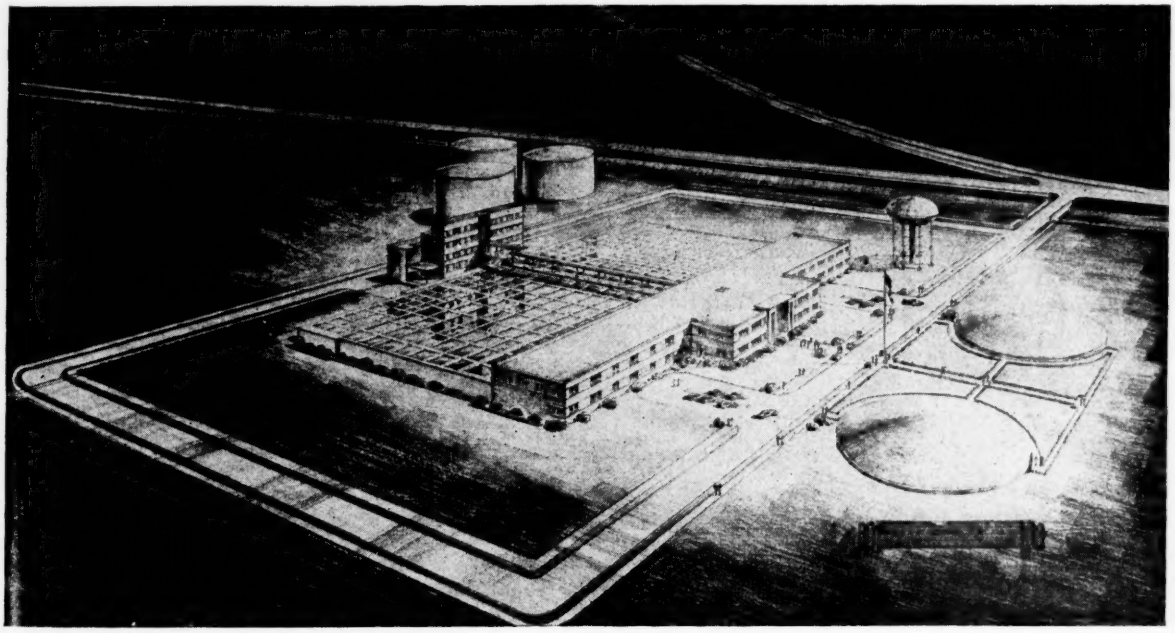
In 1918 a large part of the present mill site was occupied by the Terry Shipbuilding Company who built tankers during World War I. The village of Port Wentworth was founded for employes of that yard. Although shipbuilding operations were discontinued after the end of hostilities, the village continued to exist. Employes of the Savannah Sugar Refining Corporation and of other industries locating there found the village a convenient place in which to live.

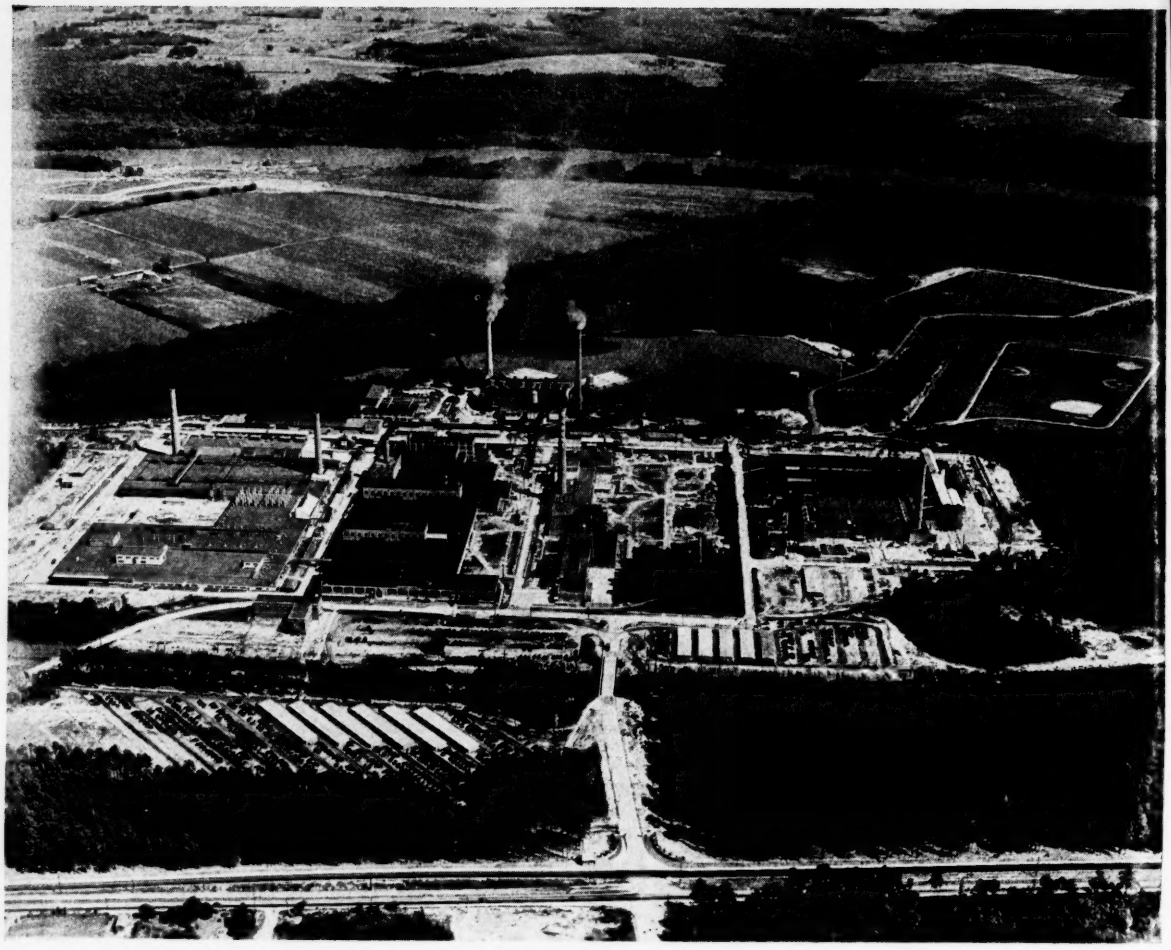
In 1934, the present interests acquired the main part of the old Potter Plantation which since 1916 had become known as Port Wentworth. The present mill site was acquired in 1936, and during World War II it was leased by Port Wentworth Corporation to the MacEvoy Shipbuilding Corporation. That lease was terminated in 1944 and on April 1, 1946, it became the property of a great new industry, thus making the transition from ancient to modern times complete.

The new mill will be served exclusively by the Savannah & Atlanta Railway Company, which since 1939 has been controlled by Port Wentworth Corporation. The railway was reorganized as of January 1, 1939, with a loan from the Reconstruction Finance Corporation. This loan was refinanced as of March 22, 1946, with a bond issue sold to insurance

(Continued on page 72)

Water plant proposed by City of Savannah, which will spend $4,000,000 for a new domestic and industrial supply. J. E. Sirrine & Company, Greenville, S. C., are the engineers.





Aerial view of the DuPont rayon and cellophane plant, one of Richmond's largest employers.

Virginia Capital Escapes Reconversion Headaches

by

Robert C. Harper

RICHMOND, Virginia, perhaps is one of the few cities of its size in America escaping reconversion headaches.

The reason is that Virginia's capital city, a consumer goods manufacturing center, was not primarily a war production focal point, and thus had little reconverting to do.

Before World War II, Richmond's economy revolved around tobacco manufacturing and allied products, Richmond being the cigarette manufacturing capital of the world. The ten billion cigarettes made in Richmond last year, an all time record, would cover many trips to the moon, if placed end on end.

Of course, Richmond's industry was diversified. Tobacco led in total employment, but DuPont made rayon and cellophane, the paper industry thrived, steel fabricating plants did a good business, and Richmond's favorable geographic location at the top of the South found expression through numerous lines of trade manufacturing, wholesale and retail—growing out of Richmond's financial, transportation and commercial importance.

During the war steel tanks, parachutes, tires for heavy bombers, and other items of a war nature were produced in Richmond. In the main, only a few companies were affected. Reynolds Metals Co. has its executive headquarters here and operates two plants, as it develops plans for peacetime utilization of aluminum products. Yet its main production plants are located elsewhere.

Tredegar Iron Works made shells for the Navy during the recent war, but it had been making shells for 100 years.

Because Richmond's industries are largely of the consumer goods variety, Richmond does not suffer like a durable goods manufacturing site during a depression or reconversion period. Richmond has wholesale and retail trade, financial activity, insurance and government to support it, and thus is not wholly dependent upon manufacturing.

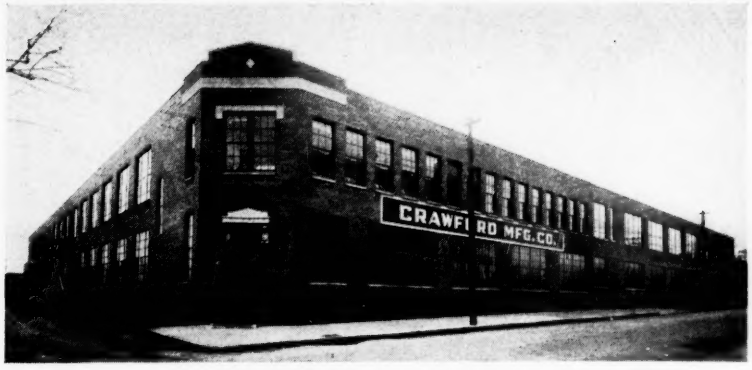
Richmond's economic stability was exemplified in an unprecedented total of more than one-quarter billion dollars poured through

retail trade channels here last year. The Richmond Chamber of Commerce says in a research bulletin.

"This record of retail sales in Richmond during peace and war is of primary value in revealing the present economic position of the area, atnd thus providing a basis upon which to forecast the future.

"Present greatly expanded volume of business in Richmond must be considered against the background of the city's recorded economic history, firm rate of growth and development, resistance to the last great national depression, and strong recovery through the pre-war period.

"With this perspective, there is reason to believe that Richmond's economic balance, notwithstanding the high level of war activity, will be less disturbed through final post-war adjustment than in the majority of large cities in the nation.



Above—Crawford Manufacturing Co., slip covers and auto tops.

Before World War II started, Richmond was the "fastest growing industrial center" of the United States. Over the ten-year period 1929-39, the value of industrial production in Richmond increased from 235 to 373 million dollars, a relative gain of 59 per cent. Over the same period, industrial production in the nation as a whole declined 16.7 percent.

Richmond, Virginia, is most fortunate that it was not a primary war production center.

Above—Southern Biscuit Co.

Below—Tobacco row. Richmond claims the title of cigarette manufacturing capital of the world.

Unspun Cotton

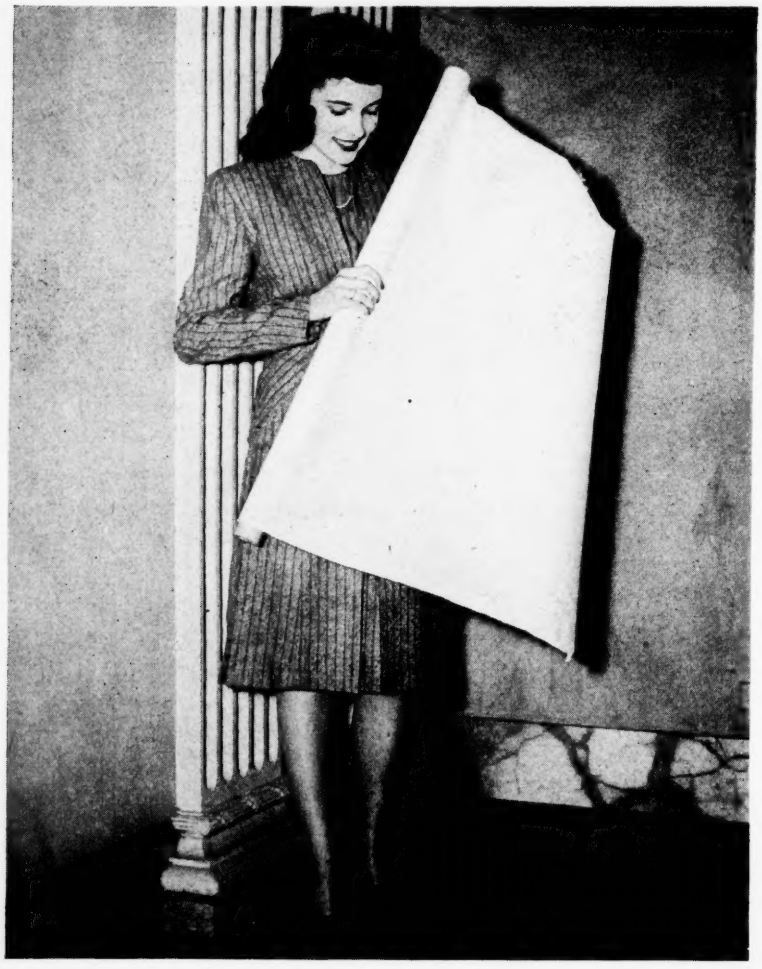
neither spun nor woven, it is expected to make market for a million bales

by
Ernest Stewart

RAPIDLY becoming familiar to the American consumer are two new products which together may provide a market for 1,000,000 bales each year for the cotton farmer. The "miracle" products are cotton insulation and unspun cotton fabrics. Both are lint products; neither requires the conventional spinning and weaving processes.

Both are the result of successful scientific research and are excellent examples of what a well-planned, concentrated cotton research program can do for the world's most versatile fiber. They are doubly important to the Southern farmer because they utilize the short staple, low grade cottons which have heretofore comprised the bulk of the ever worrisome surplus.

Below—Miss Lucille Hamer, of Brownsville, Tenn., first alternate to the 1946 Maid of Cotton, examines a roll of unspun cotton cloth. From fabric like this soon will be made disposable diapers, napkins, towels, handkerchiefs, curtains and tablecloths.



Cotton insulation, for which the demand has increased daily since the close of the war, got the jump on unspun cotton fabrics, since it was available to civilian consumers throughout most of the wartime period. Its superior insulating values, combined with an intensive sales promotion program conducted by the National Cotton Council and the Cotton Insulation Association set the stage for its postwar popularity.

With cotton insulation already available in quantity, builders have found it ideal for many uses and are experimenting with other applications. Almost as soon as contractors learned of its value in home insulation, industrial users discovered cotton's many advantages in the insulation of refrigerator trucks, refrigerator railway freight cars, railway passenger cars, yachts, and frozen food locker units. Its use in airplanes and home refrigerators is being studied.

Department of Agriculture tests show that cotton insulation has great insulating value per inch of thickness. It is extremely light, easy to install, and does not irritate or harm the bodies of workmen. Chemical treatment has made it flame- and mildew-proof and vermin-resistant.

During the war the federal government used cotton insulation successfully in more than 200 housing projects in varied climates ranging from frigid Alaska to tropical Cuba. Theater owners, who have tried cotton insulation in their buildings, predict a bright future for King Cotton's new favorite. And cotton insulation has won the attention of boat and yacht builders because motor throbs do not make it settle.

D. D. Grassick, engineer for a fabricated products company of Chicago, who recently supervised the installation of cotton insulation in an Illinois Central Lines refrigerator car at McComb, Miss., has pointed out its advantages in mobile refrigerator units. The advantages he cites include: (1) Cotton insulation's ability to resist heat and cold, (2) its ease of installation, (3) long life, (4) flame-proof qualities, (5) lightness of weight and (6) low cost.

Cotton insulation is not exactly a new discovery since cotton first was

Right—A workman at the McComb, Miss., shops of the Illinois Central Railroad installs cotton insulation in the top of an express refrigerator car. Aluminum foil on the outer side serves to reflect unwanted heat radiations. Cotton insulation for industrial purposes is made up in special thicknesses and backed by paper or metal foil.

used as an insulating material thousands of years ago by the Egyptian pharoahs. However, the idea was lost after their era of civilization had passed, and cotton insulation in its present improved form had to be developed from the "bottom up." Modern cotton insulation comes in batt-like rolls, which are installed simply by unrolling them and laying or tacking them into place.

In less than six years cotton insulation has jumped from an infant industry into "big business." Production began to spurt soon after the Department of Agriculture called the attention of American business to cotton's "K-factor," or ability to resist heat and cold. In 1940 insulation production totaled only 110 bales. By 1944 it had increased to 120,000 bales, and manufacturers forsee the not far-distant day when insulation will require 500,000 bales of cotton a year.

The postwar building boom offers a tremendous market for cotton insulation. Millions of new homes likely will be built in the United States during the next 10 years to alleviate a critical housing shortage. It also has been estimated that 23,000,000 of the American homes already built could be made more healthful by additional protection from climatic extremes.

These facts coupled with cotton insulation's impressive possibilities in the various types of refrigerated units may make the new product the cotton industry's largest peacetime market.

Above—Cotton insulation is soft as a powder puff.

Unspun cotton fabrics loom as definite challenges to paper in the disposable towel, napkin and handkerchief markets. They are very absorbent and easy on the skin. An unspun cotton diaper already is available for postwar babies. Curtains, draperies and tablecloths that can be discarded after a single using are other potential markets for unspun cottons.

The manufacture of unspun cottons is relatively simple compared with the many intricate processes involved in orthodox textile production. Cotton fibers are cleaned and combed into mats as the first steps in unspun manufacture. A liquid plastic then is added as a binder, and the fibers sent through rollers from which emerge unspun cotton cloth.

There are several different types of unspun cottons, but the expensive spinning and weaving processes are not needed to produce any of them. This accounts for their low cost and indicates an unspun cloth market of 500,000 bales of cotton a year. Unspun cottons likely will find a place in every American home as soon as economic conditions and fabricating facilities permit unlimited production.

Unspun cloth has proved to be an ideal packaging material for several

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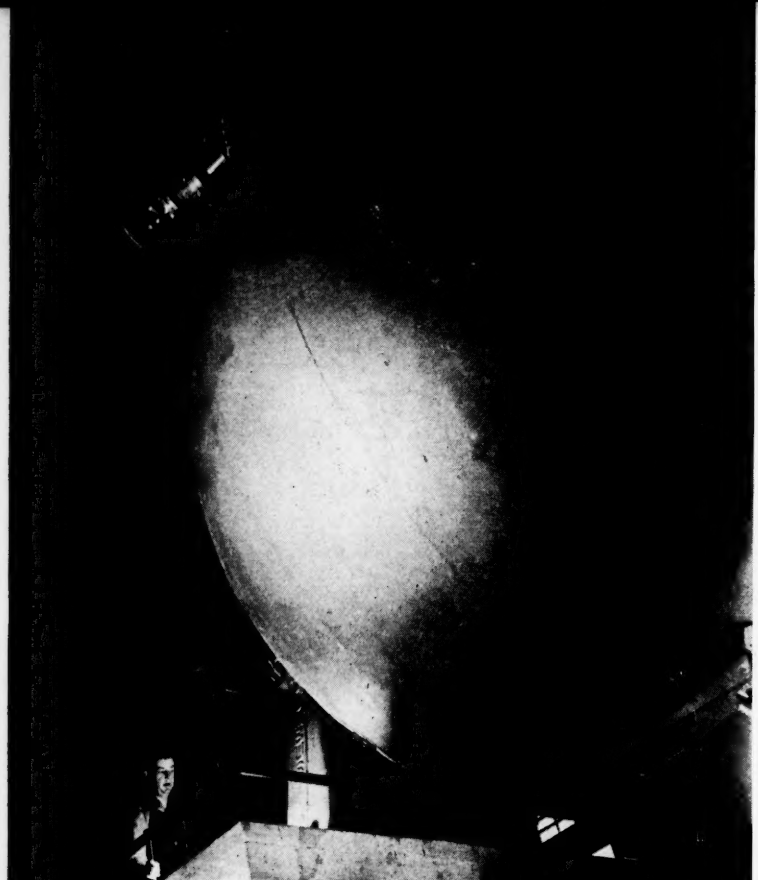
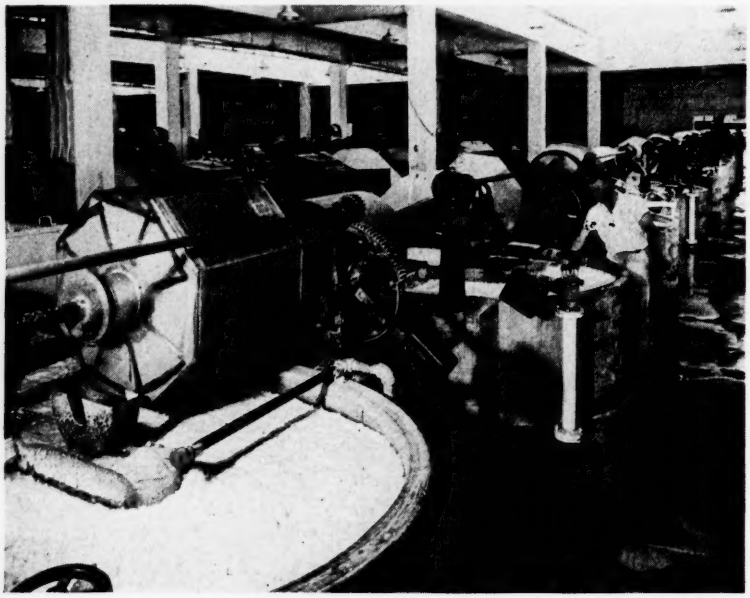


Above—Digesting sphere.

CIGARETTE PAPER
—a North Carolina Exclusive

Below—Refining Department beaters.



A NEW American industry was born in the mountains of North Carolina in 1939—the manufacture of fine cigarette paper. It is, in a sense, a new industry to the world, since it is the first to manufacture cigarette paper from raw flax, and has now grown to the point where it supplies most of the world's cigarette manufacturers.

Ecusta Paper Corporation, located at Pisgah Forest, North Carolina, covers 85 acres, with nearly one million square feet under roof. Out of 59 locations considered, Pisgah Forest was chosen because of the pure water which flows from the Davidson River into the present location of the plant.

This cold mountain water—Ecusta is a Cherokee Indian term meaning rippling water—is free from the harmful minerals which would mar the gleaming whiteness of quality cigarette paper. Pure air, free from the contamination of other industries, is also essential.

The many visitors to Ecusta are amazed at the appearance of the buildings and grounds of this new and modern industry. The precisely arranged brick buildings and the beautifully landscaped surroundings are a far cry from the normal concept of a busy manufacturing establishment. There is no smoke and no odor; one would have to be told before he knew that thousands of people are at work in these buildings, were it not for the buzz of the many machines which run continuously.

Since production began, the workers have been on three eight-hour shifts, and the most important phases in the process never cease. Only at Christmas and on July 4, when the plant has its annual picnic, does the entire plant shut down production. After these holidays it takes approximately 48 hours to begin operation again.

The complexity and enormity of the manufacturing process are at times almost beyond comprehension. Consider, for example, the giant water filtration plant, with a capacity of up to 25,000,000 gallons of water every 24 hours. It is necessary to measure the rate of flow in thousands of gallons per minute.

by
Frances L. Walker

Above—Sampling water in the filter plant.

It is in the pulp mill that raw flax is first started on its way to becoming finished paper. This is done in tremendous cookers or digesters with the aid of chemicals and steam. As this process goes on, the fibers are washed many times to free them from any impurities that might be present.

After the pulp is conditioned with chemicals it is sent to the refining room, where 88 beaters convert the pulp into a snowy white mass. Other chemicals are added here to assure the proper strength and burning speed of the paper. The latter must be the same as that of tobacco.

The flax pulp, combined with 200 parts of water, is fed continuously onto the finely meshed revolving wires of the paper making machines. On these machines water marks are impressed by wire meshed rolls called dandy rolls. Pure white paper comes from the machine wires and is dried over a series of steamheated rollers to be wound into massive rolls 100 inches wide. Eight machines perform this operation 24 hours a day, 7 days a week. The final operation consists of slitting the huge rolls into bobbins, ready to be shipped to the cigarette manufacturer.

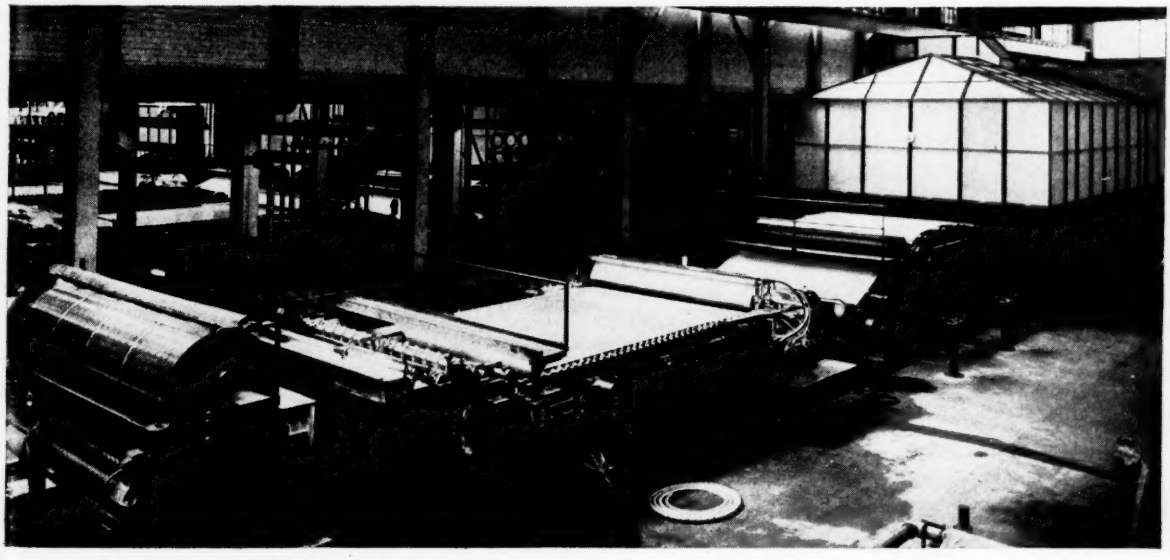
Lest the process seem oversimplified, here is a more detailed account of a few side operations which, although not a part of the primary process, are indispensable to the smooth functioning of the plant.

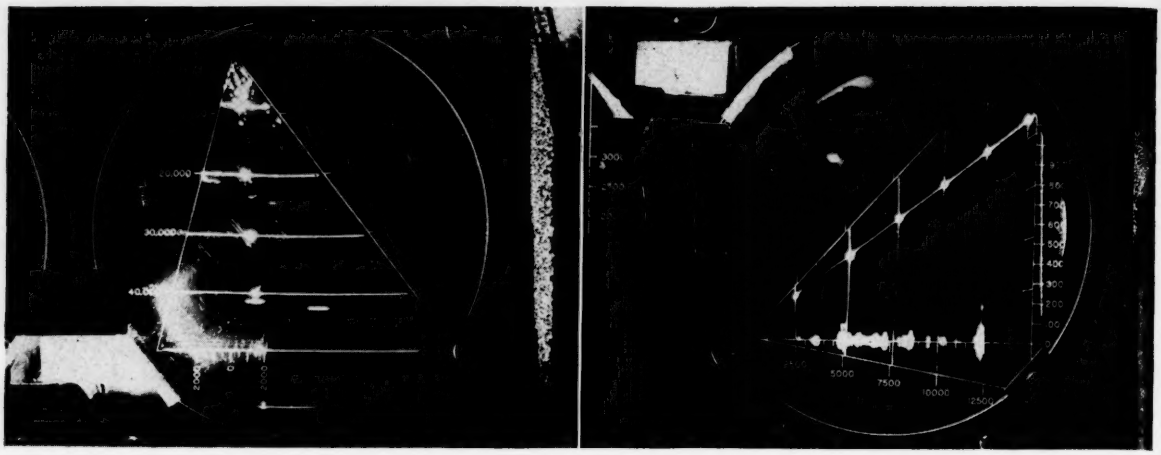
The water which flows into the filtering plant is being constantly tested on the largest testing table in the world. The amount tested each day is enough to supply a city of 150,000. The two reservoirs which hold this water after it has been tested each have a capacity of 1,500,000 gallons each, also said to be the largest of this type in the world.

Undoubtedly one of the most important single groups is the engineering and maintenance department, upon which smooth running of the machines depends. More than

(Continued on page 64)

Below—Wet end of the Fourdrinier paper machine.

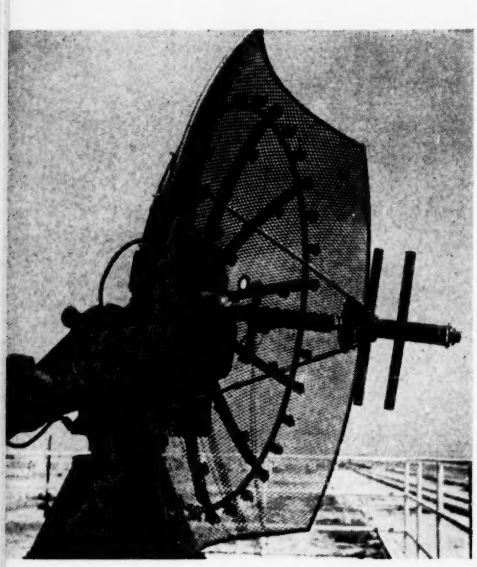




How the incoming plane is guided to a safe landing is shown by the illustration above. Radar operators watching the indicators direct the flyer to change his course to the left or right, or to correct the angle of descent to the proper glide path.

RADAR ---

Boon to weather blinded transportation



SPECULATION on the use of war-developed radar for peacetime purposes is materializing into definite conclusions that the science of reflected radio pulsations will make sea navigation safer and lessen the danger of plane crashes during landing in periods of poor visibility, and can also be used to regulate harbor shipping, for airport surveillance and traffic control, weather information otther new applications.

Installations of radar equipment for navigational purposes have already been made. The use of radar to guide planes along the proper glide path to the airport runway is also a reality, which was clearly demonstrated by the Navy last month at its Banana River, Florida air station.

Ground controlled approach is the way navy officials described the technique of employing a ground radar to determine the position of the aircraft and then "talk" it down along the proper route both with respect to the location of the runway and the ideal angle of descent.

Left upper—The approach controller of the Bendix-built radar set used in the Banana River demonstration of "talking down" planes to a ground controlled approach landing in foul weather.

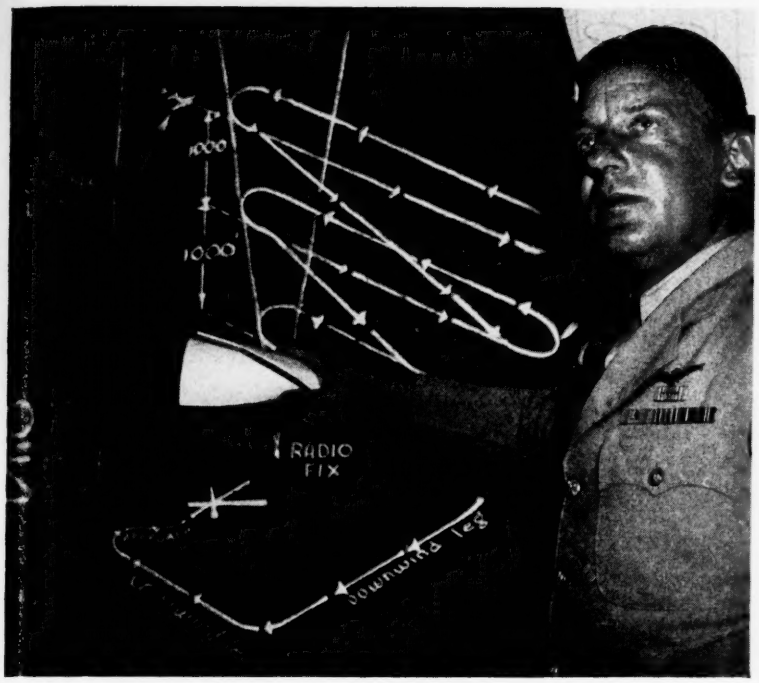
Left Lower—Close-up of the antenna of the sensitive radar equipment that records the position of planes above an airport and permits operators of the equipment to direct the flyers to a safe landing despite low or zero visibility.

Experts view television as one of the most promising fields where radar will exercise a powerful influence because many of the components of radar are similar to those used in sending images through the ether. The large numbers of men trained in radar are also expected to widen the use of electronic equipment for many purposes.

Radar is a familiar term. After hostilities ceased, many explanations were published about that five-letter word coined from "radio detection and ranging," a phrase which some believed should more appropriately be "radio direction-finding and ranging." Some of these explanations and predictions went far afield, according to radar engineers.

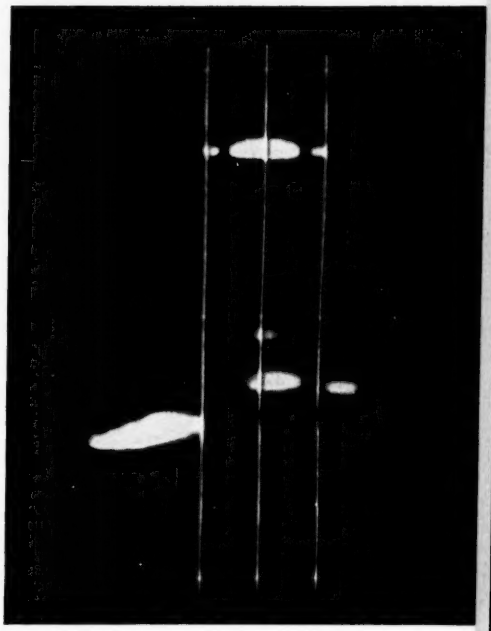
The chief importance of radar during the war was that it first supplemented and then supplanted the optical and sound instruments which up to the time of radar's practical application were the mainstays in the procedure for detecting presence of the enemy. Radar was unhampered by darkness, fog, smoke or rain.

Basis for defense against aircraft attack, radar proved itself in the British repulse of Luftwaffe at-



Above—Comdr. J. T. Thornton, Jr., commanding officer at the Naval Air Technical Training Center, Banana River, Fla., outlines the course a plane follows when being "talked down" to the runway by radar operators. The incoming plane descends 1,000 feet from the upper level or holding pattern to the middle level, another thousand feet to the lower level to which Commander Thorton points, and then is guided or "talked" along the downwind, cross-wind and approach legs to the airport runway.

Right above—A Bendix-built radar antenna tower and truck used in radar tests between Fort Smallwood on the shoreline of the Patapsco River near Baltimore and the cut-off channel in the Chesapeake Bay off the Seven Foot Knoll light.



Right—The way two vessels appeared on the indicator of the Fort Smallwood set as they passed between buoys off Seven Foot Knoll, 7,000 yards away. The large white blotch in the upper part of the illustration is the lighthouse; the large blotch in the lower part is a vessel of the Victory type as she is about to pass between the buoys, preceded by a smaller vessel.

Below—A graphic illustration showing how the radar beam sweeps a given scene (in this instance the Baltimore skyline) in much the same way as the beam of a searchlight. The radar waves of ultra high frequency are reflected back to the receiver and there recorded to indicate position and distance. (Drawing Courtesy Bendix Radio.)

tacks. Despite a critical dearth of fighter planes, the British were able to use radar to spot the oncoming Nazis in time to get their defensive planes into the air and cause German losses which at the start averaged 15 per cent.

Such heavy casualties forced the

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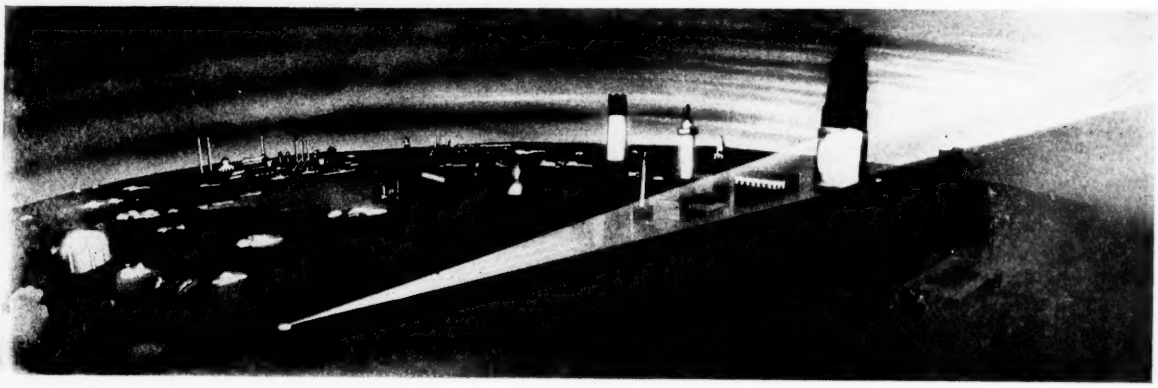
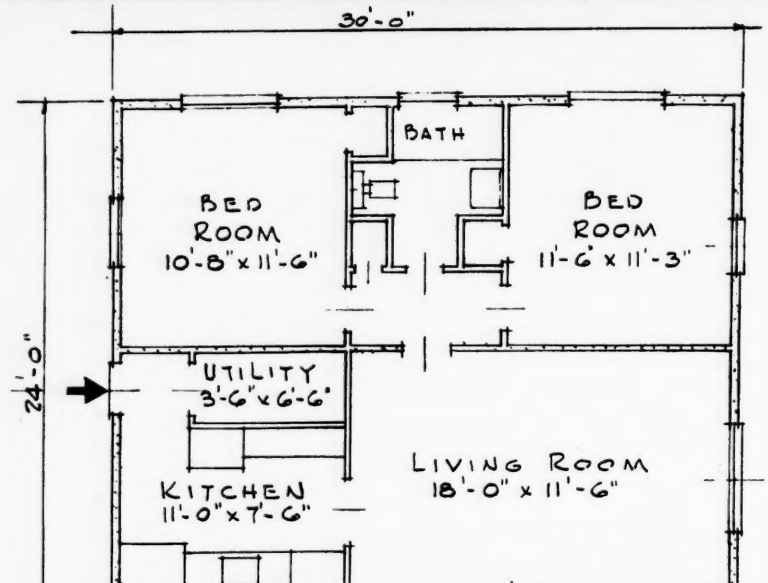
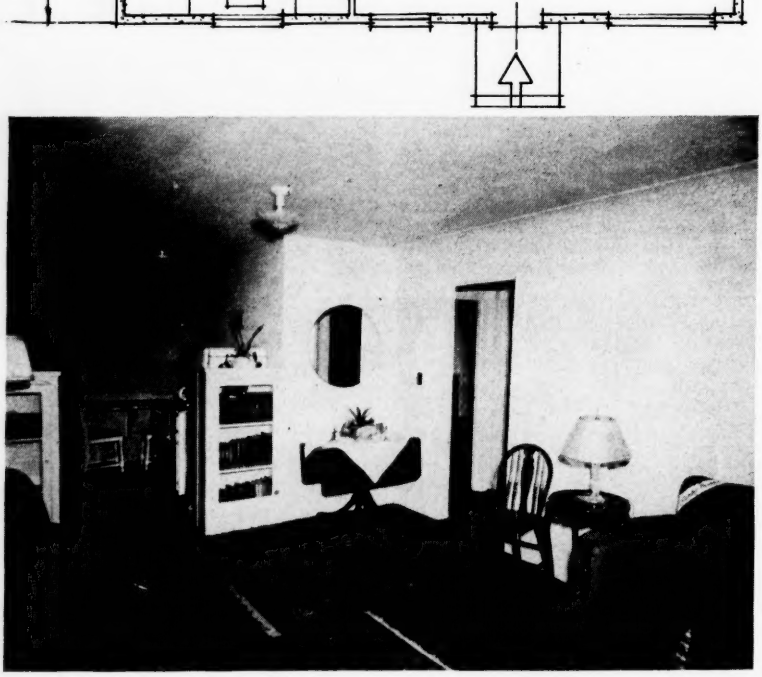






LeTourneau Establishes Texas School

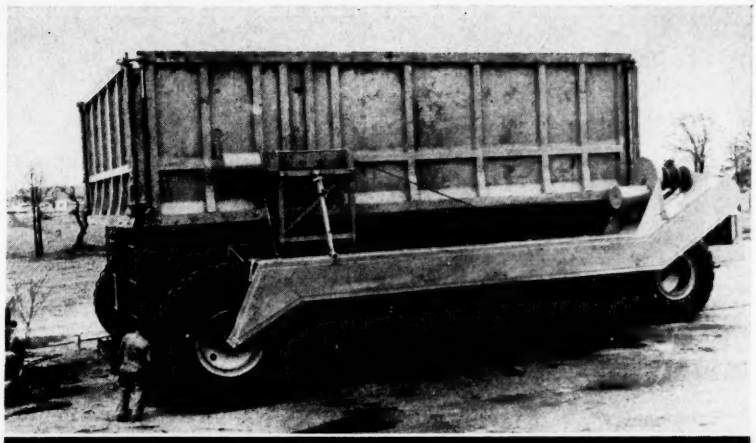
WHAT could be more fitting than that an army general hospital, dedicated to rehabilitating the bodies of those who fought for their country, should be transformed into a trade school which will not only aid veterans in learning to strike out for themselves, but will also help in solving a problem looming large in the minds of most ex-servicemen, the housing shortage?

All these worthy aims will be wrapped up in one tidy parcel by the LeTourneau Technical Institute of Texas, which has taken over the plant of the Harmon General Hospital at Longview. LeTourneau Tech will be under the auspices of R. G. LeTourneau, Inc., which also has Southern plants at Vicksburg, Miss., and Tournapull, Ga.

R. G. LeTourneau, president of R. G. LeTourneau, Inc., and guiding spirit of LeTourneau Tech, has long been convinced that the nation's system of schooling was outmoded, as concerned 99 out of 100 youths. A boy had to study either an academic course, which left him with no practical foundation, or a trade

The illustrations on this page show the LeTourneau-developed concrete house. At the top is a complete unit, at the bottom, the interior, with the plan arrangement in the middle view.

Right—The Tournalayer, by which the LeTourneau concrete house is cast. At the top, the outer form is ready to be lowered over the inner form. Next, the concrete is being poured. In the third illustration, the Tournalayer has been lifted and the concrete house is exposed, while at the bottom is shown a close-up of the unfinished house.



school course, which gave him the tools to earn a living, but could not give him the well-rounded education necessary to success.

LeTourneau Tech hopes to combine these two extremes, taking the best from each. To this blending it will add a third ingredient, which in many ways is the outstanding feature of the school. All who attend the school will also be working in the factory. This will have a three-fold advantage. It will enable the student to support himself, it will afford a practical application of his classroom studies, and it will speed solution of the housing shortage on a nation-wide basis. The last is true because the chief product of the factory will be Tournalayers, the movable steel units which form, pour, harden and literally lay four-room concrete houses overnight. Tournadozers, the corporation's own form of bulldozers, will also be made.

While the entire scheme is pioneering, it is by no means an untried venture. The same system, on a smaller scale, has been in operation for a number of years at the LeTourneau plant at Tournapull, Georgia.

At the outset the school, with a faculty of technical teachers, expects to offer courses in mathematics, mechanical engineering, drawing, machine shop practice, chemistry, electricity, welding theory and practice, metallurgy, thermodynamics and physics. Student workers will spend eight hours a day in the plant and about two hours daily in school. However, it is possible that beginning students will be given from two to six months of schooling outside the factory. In some of the school buildings, it has been suggested, small lathes, milling machines and other machine tools will be installed to familiarize the students with the operation of such equipment. After some 90 to

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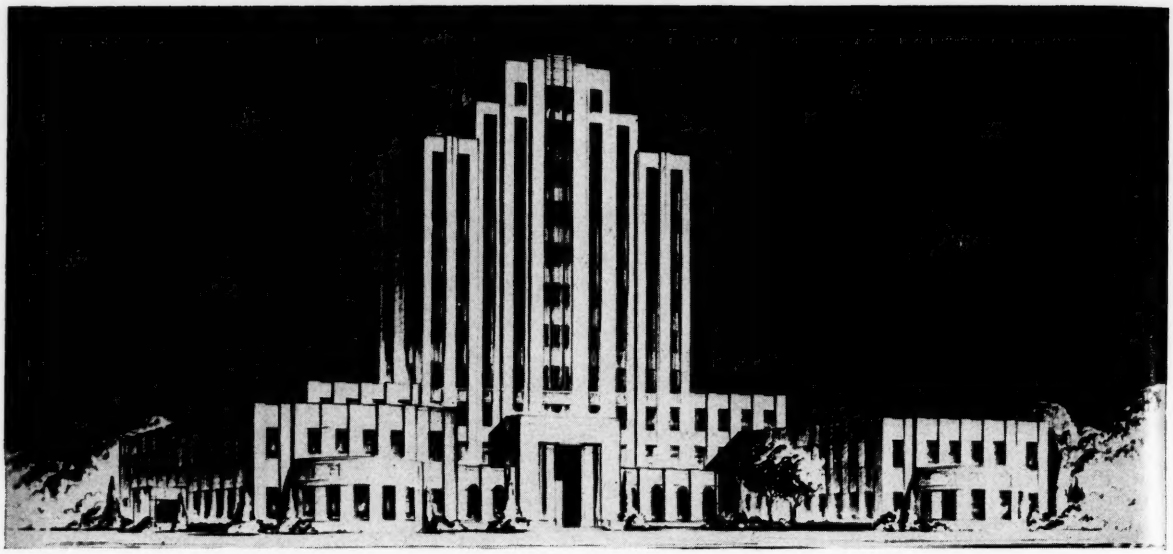
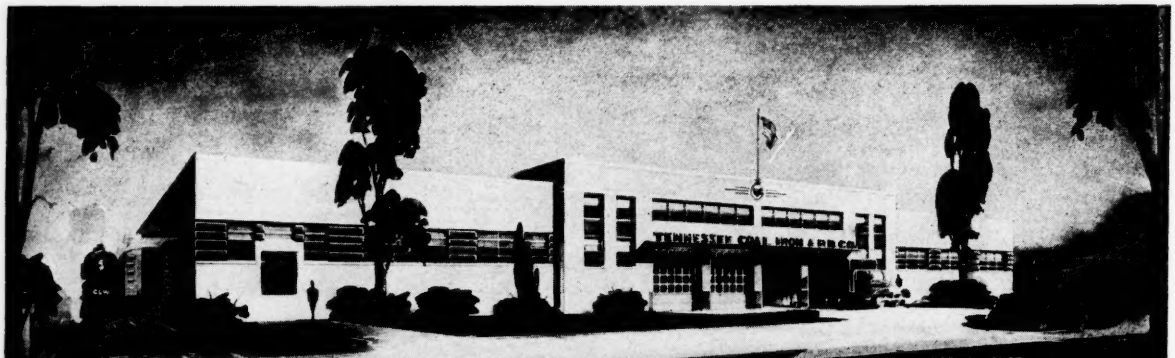
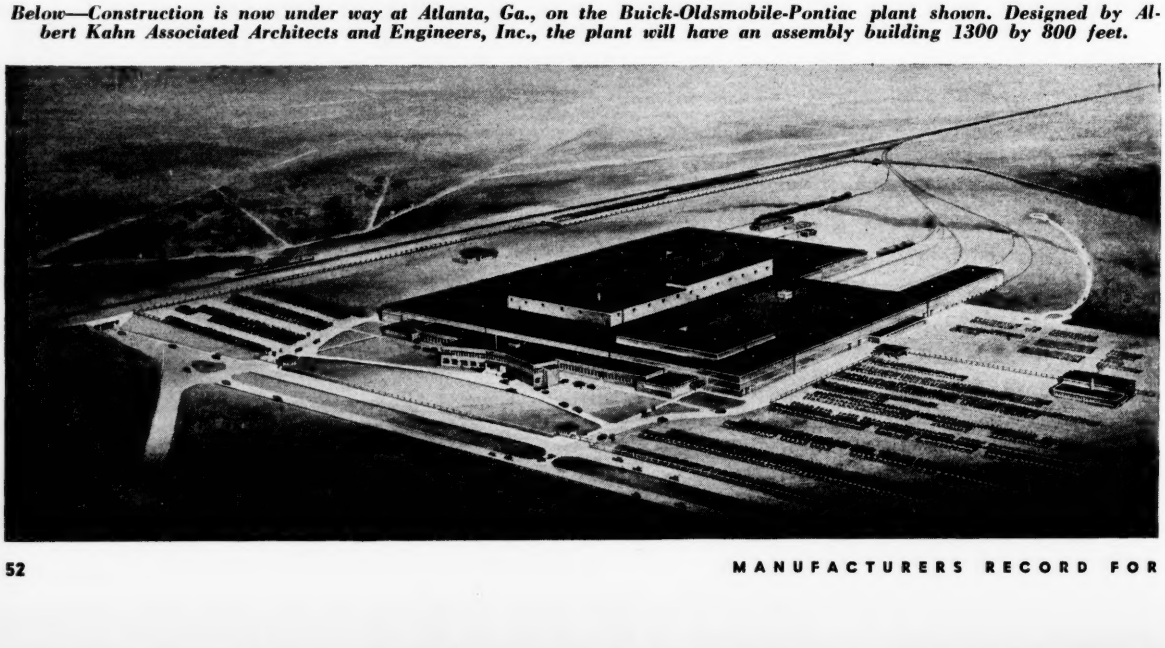


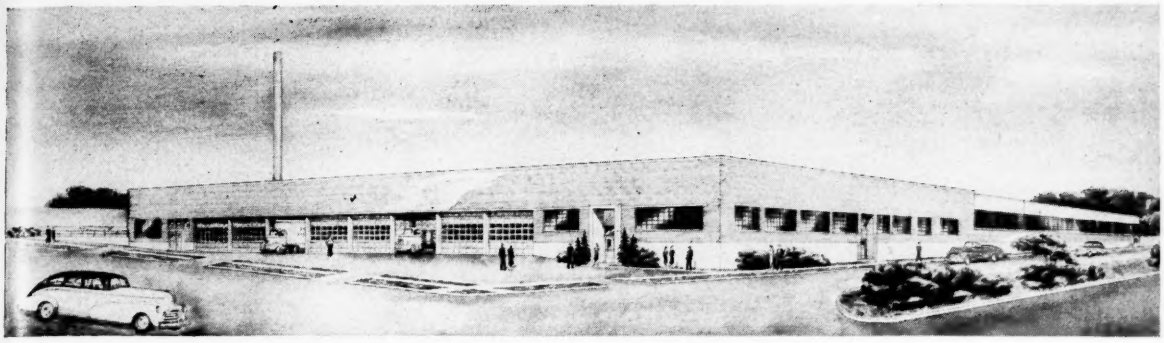
The crippled children's clinic proposed at Birmingham, Ala., will contain about 120 beds, with a separate out-patients department, according to Warren, Knight & Davis, the architects.



Above—Warehouse proposed at Memphis, Tenn., by Tennessee Coal, Iron and Railroad Co., United States Steel subsidiary. To serve the North Mississippi, West Tennessee and Arkansas area. To be of steel and brick construction, the structure will approximate 200 by 245 feet. Plans are by Hanker and Heyer.

Below—Construction is now under way at Atlanta, Ga., on the Buick-Oldsmobile-Pontiac plant shown. Designed by Albert Kahn Associated Architects and Engineers, Inc., the plant will have an assembly building 1300 by 800 feet.





Contract for a new parts warehouse at Baltimore has been let to Davis Construction Co. by General Motors Corp. It will cover an area of approximately 104,000 square feet.

Southern Awards Total $148,911,000 in March

by

Samuel A. Lauver

REMINISCENT of wartime construction levels, the March total for contracts let below the Mason and Dixon line rose to $148,911,000, or the largest figure in almost three years.

The last total recorded as higher than the March aggregate was that of June, 1943, when southern contracts amounted to $159,804,000 to make that month the second greatest of that year.

Two factors were largely responsible for the current high March total. One was the increased activity in newly initiated industrial construction and the other was a greatly accelerated southern highway construction program.

The total for March industrial construction was $58,551,000, or over twice the figure for the preceding month and about three per cent above the industrial contract total for the comparable month of last year. No monthly industrial total has been greater during the interim.

Highway contracts in March totaled $35,331,000 to make the month outstanding as the most active in a decade. The nearest approach to the figure within that time is the $33,051,000 of May, 1939.

First quarter figures also indicated the strong tide toward record building activity. The figure for the first three months of this year is $379,910,000, as compared with the $310,689,000 for the similar period of 1945 and the $197,484,000 for the first three months of 1944.

Industrial construction totaling $124,890,000 so far this year, as in the first quarter of last year, was a mainstay of the totals. Private building which this year ranks second with $80,393,000, last year at this time was down around $14,003,000.

Engineering and highway construction currently occupy third and fourth places respectively in the southern construction picture. Slightly more than a million dollars separate the $66,436,000 total of engineering contracts and the $65,243,000 for southern highway work this year.

Public building is now at the end of the list of southern construction categories. The total for the first quarter of 1946 is $42,948,000, made up of $31,445,000 for government buildings, $11,403,000 for school projects and a small figure for public housing.

A substantial part of the current three-month public building figure was represented by residential work, which totaled $39,274,000 and was followed by the $30,344,000 for commercial structures. Private assembly structures such as churches, theatres and auditoriums represented $6,590,000, while office building accounted for the $4,185,000 balance.

Dams and earthwork have occupied a strong position in the heavy construction field. The total for the three months is $53,124,000, with several large projects contributing substantially to the total. The figure for this type of work in March was $18,875,000.

Comparisons of figures for March 1946, and the comparable month of last year follow:

March 1946		*March* 1945
$19,206,000	Private Building	$ 3,166,000
$58,551,000	Industrial	$59,951,000

(*Continued on page* 62)

South's Construction By Types

	March, 1946 Contracts Awarded	March, 1946 Contracts to be Awarded	Contracts Awarded First Three Months 1946	Contracts Awarded First Three Months 1945
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$ 1,464,000	$ 8,425,000	$ 6,590,000	$ 1,814,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	10,057,000	3,766,000	30,344,000	1,938,000
Residential (Apartments, Hotels, Dwellings)	7,087,000	6,125,000	39,274,000	9,814,000
Office	598,000	2,510,000	4,185,000	437,000
	$ 19,206,000	$ 20,826,000	$ 80,393,000	$ 14,003,000
INDUSTRIAL	$ 58,551,000	$ 40,663,000	$124,890,000	$176,890,000
PUBLIC BUILDING				
City, County, State, Federal	$ 10,462,000	$ 65,442,000	$ 31,445,000	$ 53,848,000
Housing	.....	.....	100,000	10,427,000
Schools	2,132,000	30,042,000	11,403,000	4,159,000
	$ 12,594,000	$ 95,484,000	$ 42,948,000	$ 68,434,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	$ 18,875,000	$ 44,950,000	$ 53,124,000	$ 27,451,000
Federal, County, Municipal Electric	1,661,000	2,344,000	6,264,000	1,954,000
Sewers and Waterworks	2,693,000	23,336,000	7,048,000	8,277,000
	$ 23,229,000	$ 70,630,000	$ 66,436,000	$ 37,682,000
ROADS, STREETS AND BRIDGES	$ 35,331,000	$ 54,739,000	$ 65,243,000	$ 13,680,000
TOTAL	$148,911,000	$282,342,000	$379,910,000	$310,689,000

$3,400,000 pilot plant built at Harleyville, S. C., for extracting alumina, the basis of metallic aluminum, from South Carolina kaolin and limestone.

$3,400,000 Pilot Plant in South Carolina Produces Alumina from Kaolin

AN entirely new industry for the south and the nation has been in operation since June 1945 near Harleyville, a small hamlet in South Carolina.

Born of war necessity, this pilot plant has already proven that high-grade alumina can be processed from South Carolina, kaolin and limestone, thus making this nation independent of foreign imports of bauxite, the former source of aluminum.

The plant bears the name "Ancor," which is short for American Nephalene Corporation of New York, a subsidiary of Ventures, limited, of Toronto, Canada, whose metallurgists and chemists developed the new process of extracting aluminum oxide (the basis of aluminum) from South Carolina clays.

Employing 200 skilled workers, the plant was built at a cost of $3,400,000 by the Daniel Construction Company of Greenville, S. C., for the Defense Plant Corporation of Washington, D. C. Power is supplied by Santee-Cooper's large hydro plant located in an adjacent county.

It is being operated for the government by the Ancor Corporation with Charles F. Jackson as resident manager and F. R. Archibald, assistant manager. The plant has a capacity of 50 tons of alumina daily.

J. Ross Hanihan of Charleston, president of the Volunteer Portland Cement Company of Knoxville, Tenn., furnished the site for Ancor which rests on one of the largest and purest beds of limestone in America. His company is now building a large lime plant which will be followed by a Portland cement addition sometime during 1946.

A huge stock pile of dicalcium silicate, a desirable raw material for the manufacture of Portland cement has been building up from the operation of the Ancor Alumina plant and the new cement plant will be built adjacent to Ancor in order to utilize this by-product.

The engineering firm of J. E. Sirrine Company of Greenville, S. C., has been busy for the past several months laying the foundations for the lime plant and mapping the location for the new cement plant.

of 75 tons of magnesium and 150 tons of liquid chlorine daily. Included is a 95,000-kva. generating plant. The buildings are generally one story in height with concrete floor on the ground and composition roofing. Fluorescent lighting is installed in the administration, laboratory, change house, and maintenance office and lunch room. Toilet and sewage facilities are adequate for 2,000 people.

Well water is obtained from three wells approximately 700 feet deep, capacity 1,500 gallons per minute. Natural gas is supplied through a 10-inch main delivered to the plant site at 100 pounds pressure through two scrubbers. The storage and switching track within the plant is served by the Kansas City Southern and Southern Pacific railroads. The old bed of the Calcasieu River joins the east side of the plant. The river will accommodate ships drawing up to 30 feet.

Southern Alkali Leases Plant at Lake Charles from D. P. C.

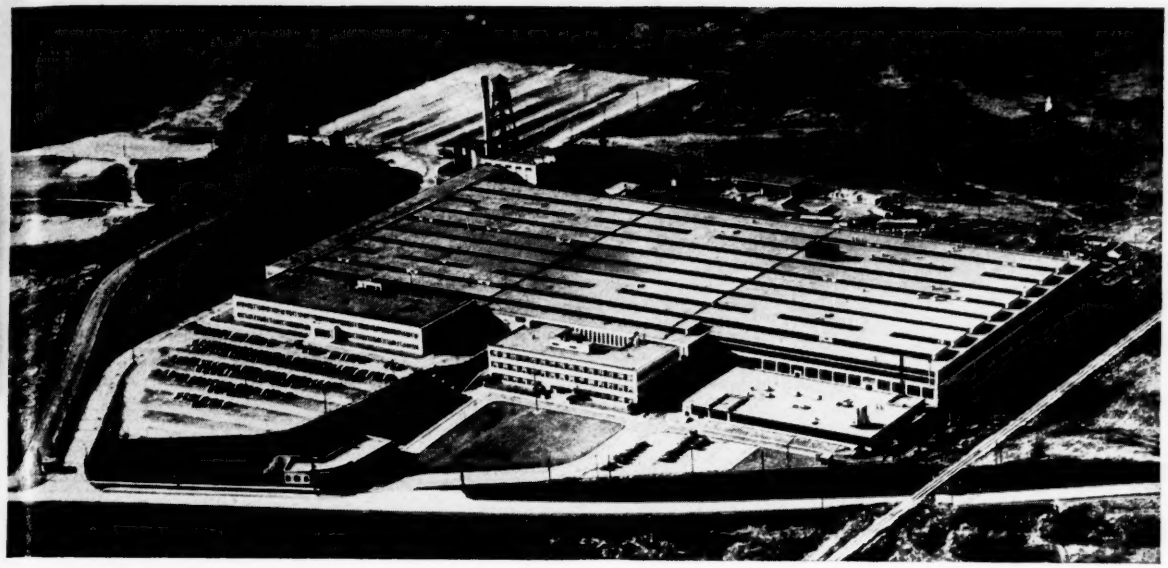
Southern Alkali Corp., affiliate of the Pittsburgh Plate Glass Co. and American Cyanamid Co., has leased a large part of the plant built during the war at Lake Charles, La., for production of magnesium and liquid chlorine. The facilities will be used to manufacture chlorine and caustic soda, according to Harold F. Pitcairn, president of the leasing organization, but plans are in the development stage and no details are available.

The plant is located on an 87.55-acre site and has a designed capacity

United Gas Pipeline Pushes Work on Texas Plants

United Gas Pipe Line Co., important natural gas operator in the Gulf Coast states, is now finishing work on gathering and connecting lines and on gasoline and dehydration plants in the Carthage, Texas area following recent completion of the $7,500,000 pipeline between that East Texas field and Sterlington, near Monroe, Louisiana.

One of the outstanding features



St. Louis war plant leased by Emerson Electric Co.

Emerson Electric Centers Activities in War Plant

EMERSON Electric Manufacturing Co., St. Louis, Mo. has announced a post-war expansion program involving concentration of all its manufacturing and administrative operations to a new plant at 8100 Florissant Avenue leased from Reconstruction Finance Corporation.

This 5-million dollar plant was erected on approximately 40 acres, under Emerson Electric supervision, for development and manufacture of airplane gun turrets during the war.

The company had previously acquired the 162 acre tract on which it is built and completed its first plant there in 1940 for manufacture of hermetic motors for the refrigeration and air-conditioning industry.

All Emerson Electric operations will be consolidated at this location and the entire move is scheduled for completion in September, without serious interruption of production. An enlarged program of production of electric motors, electric fans, arc welders and several new products is under way. As a result of Emerson Electric's extensive participation in war production, a substantial armament engineering program is being continued for Army and Navy.

Based on floor area, the move will mean an increase in work space of about 50 per cent, but production increases will range up to 200 per cent on some products; increase in employment is expected to average well over 25 per cent.

Some of the features of the new plant include latest medical and sanitary facilities, cafeteria, modern recreation facilities, an air-conditioned office building and modern lighting. Modern production facilities and their more efficient arrangement will provide for increased manufacturing capacity.

Founded in 1890, the company started business in a single room of a downtown St. Louis office building. During the succeeding fifty-five years, Emerson Electric has been constantly expanding to meet an ever increasing demand for its products.

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of the new 142-mile 24-inch route is a crossing at the Red River which is described as the world's largest. Pipe for this crossing is elevated for a distance of 3,200 feet, with the main towers rising 170 feet above the river bank.

Capacity of the new line is 310,000,000 cubic feet daily. This can be raised to 395,000,000 cubic feet by installation of an 8,000 horsepower compressor station about half way between the termini.

United Gas Pipe Line Co. is engaged in wholesale natural gas operations. Principal sales are made for industrial use, to public utilities and to local and municipal distributing systems. The company transports a substantial part of the country's natural gas output.

$2,500,000 Du Pont Plant Rising at Houston

The $2,500,000 Houston, Texas plant of Gresselli Chemicals Division of E. I. du Pont de Nemours & Co. is scheduled for completion in late fall or early winter, when production will be started on manufacture of phenothiazine, a livestock remedy and Fermate, a fungicide.

About 350 workers are now engaged in carrying out construction under Jim D. Wilson, field project manager, and the figure will be raised to 500 when the peak of construction is reached during July and August, following delivery of structural steel, brick and tile.

The Fermate building will be a three-story brick and tile structure 44 feet high with reinforced concrete and structural steel. A 65-foot high still house will be four stories and brick and corrugated asbestos. Two stories and of brick and tile and reinforced concrete, phenothiazine building will be 27 feet high.

Southern Industrial Expansion

Gas—The Panhandle Eastern Pipeline Co. proposes $27,313,000 program to extend over period of two years; to deliver 90,000,000 feet of gas daily.

ALABAMA

ANDALUSIA—Building — J. S. Mann let contract for laundry building.

BIRMINGHAM—Additions—Lone Star Cement Co., Birmingham, let contract for additional cement storage silos and addition to packaging building.

BIRMINGHAM—Textile Mill—Palmer Mills, Inc., purchased Newera Mills on Vanderbilt Road, and plans to modernize and improve.

BIRMINGHAM—Building—Liberty Motors, Inc., plans building to cost $150,000.

BIRMINGHAM—Road Work — Tennessee Coal, Iron and Railroad Co. let contract for approximately seven and one-half miles of roadway for a railroad; will link with the company's new Concord coal mine.

CHILDERSBURG — Plant — Coosa River Newsprint Co. plans $10,000,000 newsprint plant at the Alabama Ordnance Works.

DOTHAN—Building—Dothan Buick Co. let contract at $25,000 for auto sales and service building.

DOTHAN—Bottling Plant—Coca Cola Bottling Co. plans bottling plant.

JACKSON—Hangar, Etc.—McKee Truck & Tractor Co. plans hangar, warehouse and auto sales building; cost $15,000.

JACKSON — Plant — E. B. Cresap plans $25,000 cold stroage plant.

MOBILE—Remodeling Station—Contract let for remodeling G M & O Station, about $250,000.

MONTGOMERY—Building—Nolin Manufacturing Co. plans three new structures and expansion of plant; estimated cost $100,000.

OZARK—Building — S. S. Dominey Motor Co. plans sales and service building; cost $30,000.

ARKANSAS

Plant—Ely-Walker Co., St. Louis, Mo., plans plant in Arkansas; recently expanded Blytheville plant.

Manufacturing Plants—Oberman and Co., Jefferson City, Mo., establishing manufacturing plants at Arkadelphia, Morrilton and Walnut Ridge to cost $60,000 each and employ 250 workers.

ARKANSAS — Shoe Foctories — International Shoe Co., 1509 Washington St., St. Louis, Mo. establishing Shoe Factories at Russelville, Conway, Searcy and Batesville, cost $100,000 each and employ 400 workers.

ATKINS — Pickle Factory — Goldsmith Pickle Co. establish pickle factory.

BALD KNOB—Plant—White County, Inc., erecting $50,000 plant to process strawberries.

BENTONVILLE—Cheese Factory — Kraft Cheese Co., Chicago, let contract for cheese factory.

BLUE MOUNTAIN—Spillway & Embankment—Contract let at $1,010,447 for completion of spillway and embankment, Blue Mountain Dam, on Petit Jean River, near Waveland, Yell county.

CARLISLE—Expansion — Carlisle Felt & Bedding Co., Inc., expanding and building warehouse; plant manufactures Commercial Felt and mattresses.

COTTER—Access Railroad—Contract let at $504,555 for access railroad to Bull Shoals Dam.

HARRISON—Cheese Factory—Ozark Dairy Goats Products Co. will double capacity of goat cheese factory.

JONESBORO—Plant — Jonesboro Charcoal and Chemical Co. will erect plant to make chemicals.

JONESBORO—Plant — Frolic Footwear, Inc., erecting new plant.

LITTLE ROCK—Replacing Street Cars—Arkansas Power and Light Co. will spend $460,000 for replacing street cars with buses as part of $17,000,000 improvement and expansion program.

LITTLE ROCK — Plant — Consolidated Chemical Industries, Inc., 630 Fifth Ave., New York, let contract for $60,000 plant to make aluminum chemicals from bauxite.

LITTLE ROCK—Expanding—Stebbins and Roberts, Inc., will spend $85,000 for expanding paint manufacturing facilities.

NEWPORT—Factory—Trimfoot Shoe Co. has plans for shoe factory.

PINE BLUFF—Ice Cream Factory—Midwest Dairy Products Co. let contract for $60,000 for ice cream factory.

POCAHONTAS—Plant — Brown Shoe Co. erecting $100,000 building.

ROGERS—Plant—Munsingwear, Inc., erecting $200,000 plant to produce nylon hosiery and underwear.

STUTTGART—Drier, Etc.—Stuttgart Grain Drying Cooperative, a subsidiary of the Arkansas Rice Growers' Cooperative Association, let contract for drier and storage elevator.

FLORIDA

Factory—Alabama Pulp & Paper Co. plans $12,000,000 pulp and paper mill in Northwest Florida, about eight miles southwest of Atmore, Ala.

CORAL GABLES—Warehouse—R. B. Walter let contract at $10,000 for warehouse.

GREEN COVE SPRINGS—Plant — Coca Cola Bottling Co. let contract at $75,000 for bottling plant.

JACKSONVILLE — Building — Coca Cola Bottling Co. plans storage building.

JACKSONVILLE—Electric Plant—City has FWA advance for planning of modernization and rehabilitation of electric plant and equipment at estimated cost of $229,400.

LAKE WALES—Plant — Florida Citrus Canners Cooperative has $250,000 modernization program under way.

MIAMI—Warehouse — Irving Fein plans $30,000 warehouse.

MIAMI—Building Addition—The Franklin Press let contract at $15,000 for building addition.

MIAMI — Addition — Biltmore Thomas Dairies plans $42,000 building addition.

MIAMI—Warehouse & Building Addition—Upton House Cooler Corp. let contract at $13,000 for warehouse and manufacturing building.

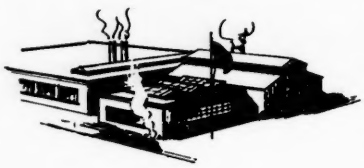
MIAMI—Boat Storage — Emancipator Boat Co. plans $40,000 storage building for boats.

MIAMI—Warehouse—Louis Miller let contract at $10,000 for warehouse.

MIAMI—Warehouse—Acme Supply Co. let contract at $20,000 for warehouse.

MIAMI—Warehouse — Code Holding Corp. plans $12,000 warehouse.

MIAMI—Mill, Etc.—Work started on sugar mill and refinery for Okeelanta Growers & Processors Cooperative, Miami, a cooperative organization holding in excess of 18,000-acres



of land being put under water control and planted to sugar cane.

MIAMI BEACH—Warehouse — American Plumbing Supply Co. let contract at $10,000 for addition to warehouse.

MIAMI BEACH—Additions and Alterations—Ben Marden let contract at $12,000 for additions and alterations.

PERRY—Paper Mill — Foley-Scanlon Lumber Co. plans new paper mill, cost $2,000,000.

TAMPA—Plant—Southern Brewing Co. let contract at $150,000 for addition to bottling plant.

TAMPA—Building—Hotels Storage Garage, Inc., let contract for automobile agency and parking garage; cost $137,000.

TAMPA—Foundations—Mass Brothers has permit for laying foundations for $15,000 warehouse.

TAMPA—Factory—Consolidated Box Co., Inc., has started work on new $35,000 factory.

TAMPA—Building—Ferman Motor Co. let contract for building; cost $120,000.

GEORGIA

VIENNA—Bus Station—Plans bus station.

ATLANTA—Warehouse—Ballard & Ballard let contract for warehouse.

ATLANTA—Office and Warehouse — Ronnelle Corp. let contract at $200,000 for warehouse and office.

ATLANTA—Warehouse—Samuel Weyman, Atlanta, let contract at $25,000 for warehouse.

ATLANTA—Building Addition — Southern Wire & Iron Works let contract at $13,000 for addition to building.

ATLANTA—Cannery—A. Alterman let contract at $14,000 for cannery building.

ATLANTA—Building—Noland and Co. let contract at $350,000 for addition to building.

ATLANTA—Addition—Swift and Co., 244 Peters St., Atlanta, let contract for addition to present building; $31,500.

ATLANTA—Alterations — King Hardware Co., Atlanta, Ga., let contract at $15,000 for alterations to building.

ATLANTA—Sales Building — Martin-Johnson Motor Co., Atlanta, Ga., let contract for sales building.

ATLANTA—Building—Richardson Properties, Inc., Atlanta, Ga., let contract at $12,000 for business building.

CEDARTOWN—Building—Rome Plow Co. let contract for manufacturing plant.

HAWKINSVILLE—Factory — Happ Bros., Macon, Ga., plan construction of garment factory.

MACON—Expansion — Georgia Power Co. plans $600,000 expansion program.

MACON—Building — Clifford B. Bateman has acquired site for $150,000 building for processing fruits and vegetables.

MOULTRIE—Bus Station—George Stages, Inc., Albany, let contract for bus station.

PORT WENTWORTH, BR. SAVANNAH — Plant—Robert Gair Co. Inc., announced that Southern Paper Board Corp. has exercised an option approximately 180 acres near Savannah for a sulphate pulp and paper board mill, approximately $9,000,000, to be expended for the mill and equipment.

STATESBORO—Warehouses—R. E. Sheppard and Albert J. Brannon clearing site for tobacco warehouse.

KENTUCKY

Pipelines—Columbia Gas and Electric Corp. New York, filed application with Securities and Exchange Commission for properties of Central Kentucky Natural Gas Co. and Cincinnati Gas Transportation Co., Columbia Gas and Electric Corp. plans to construct natural gas pipeline from Means, Menifee county, Ky., to Foster, Bracken county.

LEXINGTON—Addition—Fourth Street Tobacco Warehouse Co. has permit for $80,000 addition to warehouse.

LOUISIANA

Gas Systems — Consulting engineers working on plans for three municipal natural gas systems to be located in Plaquemine, Port Allen, and New Road, cost approximately $600,000.

ABBEVILLE—Plant—Captain M. C. Miles and Harry Hartman propose erection of meat packing plant in Kaplan.

HAMMOND—Factory—Valmy Garment Co. let contract for new building.

LAKE CHARLES—Plant — The Southern Alkali Corp. let contract for converting plant for production of caustic soda chlodine.

NEW ORLEANS — Warehouse and Office Building—C. J. Dufau let contract for warehouse and office building.

NEW ORLEANS—Plant—Dr. Pepper Bottling Co. plans bottling plant building.

NEW ORLEANS—Plant Building—Billingsley Engineering Co. let contract at $34,483 for industrial building.

NEW ORLEANS—Building bid of $34,483 submitted for new industrial building on property of Flinkote Co.

NEW ORLEANS—Building—Crane Co. proposes new building.

NEW ORLEANS—Building — Dixie Sales proposes new furniture factory building.

PLAQUEMINE—Lines—City received bids for construction of a natural gas supply line and distribution system for Plaquemine.

SHREVEPORT — Addition — Shreveport Coca Cola Co. let contract at $45,200 for addition to present building.

MARYLAND

BALTIMORE—Plant—Harbison Walker Refractories Co., Pittsburgh, Pa., let contract for excavation and railroad sidings for proposed brick plant; will manufacture basic refractory brick and cements from chrome ore, magnesite, and other raw materials.

BALTIMORE—Warehouse—Abraham Weinstein let contract for warehouse; cost $10,000.

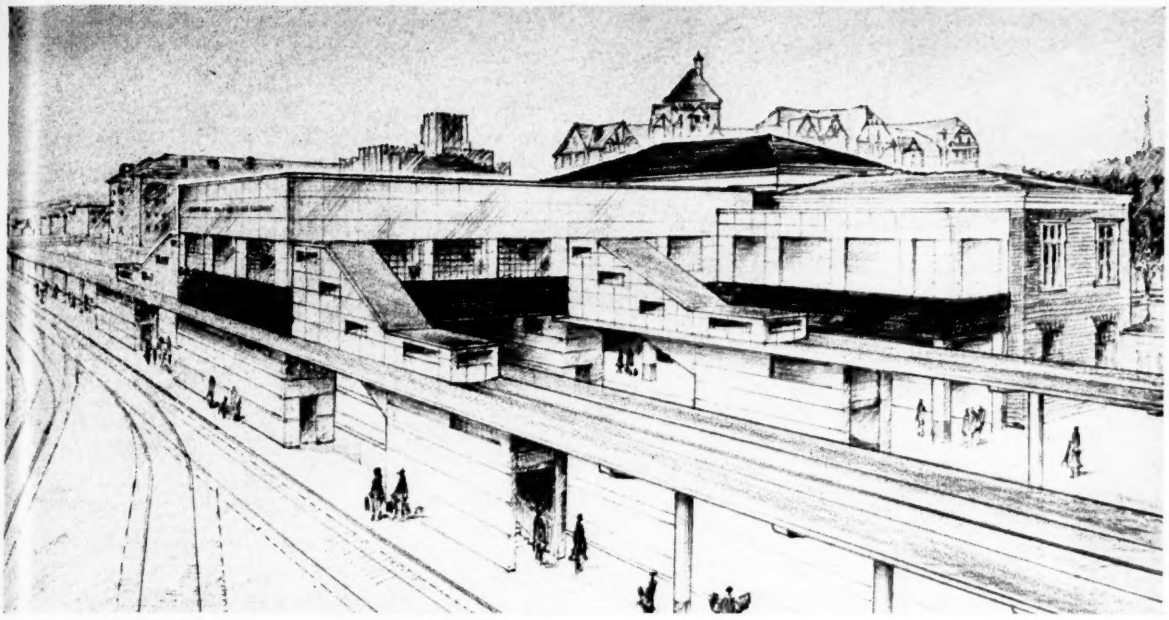
BALTIMORE—Warehouse— Harry Goldberg let contract for warehouse; cost $30,000.

BALTIMORE—Building—Frank Phillips & Co. has completed plans for shop building.

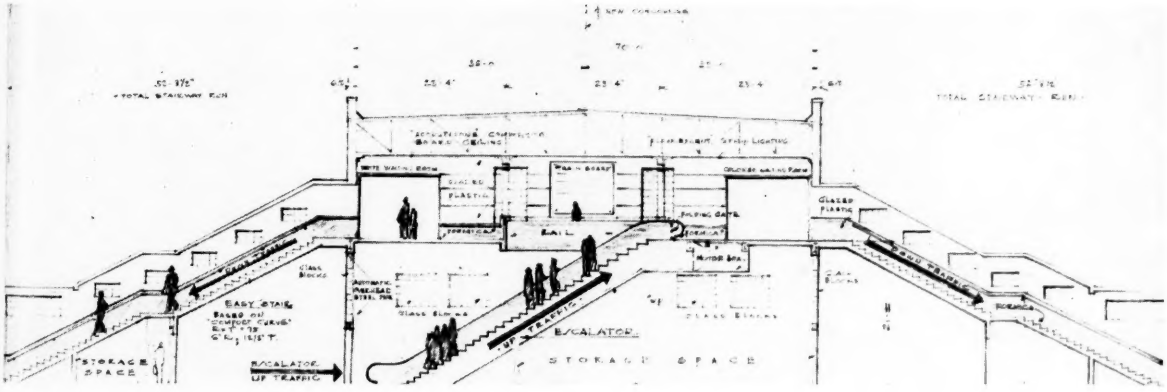
BALTIMORE—Building — Krause Motors, Inc., has completed plans for service building; cost $12,000.

BALTIMORE—Alterations — Albert Sehlstedt let contract for alterations to building.

BALTIMORE—Addition—White Paint Co. let contract for addition to warehouse at $70,000.



Norfolk & Western Railway will spend $350,000 for modernizing its Roanoke, Va. passenger station. The perspective above shows the station as it will appear from the Randolph Street bridge when the work is finished. Most noticeable of the alterations from the exterior will be a new concourse (left foreground), and train platform improvements. The cross section below shows one of the modern escalators (center) to be installed to carry passengers from the train platforms up to the concourse, as well as the enclosed stairways (left and right) to provide downward passage from the concourse to the platforms. Separate entrances and exits will facilitate passenger traffic. Fluorescent strip lighting and modernistic windows of glass block will be the predominant sources of light. The glass block will make up a large part of the concourse walls. Porcelain enamel will outline the windows and compose the remainder of the walls.



BALTIMORE—Addition—McMahon Transportation Co. let contract for addition to bus terminal; cost $30,000.

BALTIMORE—Bakery—Chesapeake Baking Co. let contract for bakery; cost $35,000.

BALTIMORE COUNTY—Plant — General Motors Corp. let contract for plant building; cost $300,000.

BALTIMORE COUNTY—Building—Bendix Radio Corp. let contract for office building; cost $60,000.

BALTIMORE COUNTY—Plant — Clarence E. Howard let contract for concrete block plant; cost $10,000.

BALTIMORE COUNTY—Bakery—Matthew Kalb, Jr., Essex, let contract for bakery; cost $10,000.

MISSISSIPPI

Garment Plants—Sanders, Inc., has plans underway for $300,000 garment plants at Drew, Houlka, Aberdeen, Charleston and Hazlehurst.

BILOXI—Bakery Building—Biloxi Bakery Co. let contract at $10,000 for bakery building.

BILOXI—Warehouse & Office — Bellande Beverage Co., Inc., let contract at $25,395 for warehouse and office building.

COLUMBUS—Factory—Tombigbee Mill & Lumber Co. started work on new plant to manufacture bedroom furniture.

GREENVILLE — Warehouse — Robert O. May filed application for warehouse building; cost $40,000.

HOLLY SPRINGS—Plant — The Byhalia Production and Marketing Asso., sponsored by the Business Men's Club of Byhalia, plans $40,000 dehydrating plant for sweet potatoes.

JACKSON—Plant—Borden Co. let contract at $250,000 for ice cream manufacturing and distribution plant.

MAGEE—Building—O. J. Biglane, mayor, let contract at $58,000 for new garment building.

MOSS POINT—Building — George County Cooperative Dairy plans construction of creamery building.

CLARKSDALE—Building — Dismuke Tire and Rubber Co. plans $250,000 innertube factory building.

NATCHEZ—Plant—City approved $100,000 in bonds for assisting in erection of an insulating board plant for Johns-Manville Corp.; estimated cost $8,000,000.

NATCHEZ—Building — Bluff City Motors Co. plans new auto sales and service building.

POPLARVILLE—Building — Board of Supervisors, Pearl River County, Miss., let contract at $80,000 for garment plant.

STRINGER—Plant—Contract awarded for new sweet potato dehydrating plant.

TUPELO—Plant—Day Brite Lighting, Inc., plan new plant to cost $200,000.

MISSOURI

Airport Improvements—City Council, L. P. Cookingham, City Manager, authorized sale of $450,000 in bonds for expansion of Municipal Air Terminal.

ST. LOUIS—Factory—Insull-Wool Insulating Co., plan factory and warehouse.

ST. LOUIS—Building—B. H. Lindenbusch, has acquired site for new auto sales room and garage.

ST. LOUIS — Addition — A. Kilpatrick & Sons will build $25,000 addition to machine shop.

ST. LOUIS—Factory—New England Lead

(Continued on page 60)

News from Industry

Tyger Heads Chicago Office of American Steel Dredge

Appointment of J. C. Tyger as sales manager of the Dredge and Pump division of American Steel Dredge Co., Inc., Fort Wayne, Ind., has been announced by Walter W. Walb, president of the company.

Mr. Tyger was formerly mid-west manager for Allen-Sherman-Hoff Company, Inc., Philadelphia, and has been connected with the dredging and material flotation industries for many years. He is a graduate of Penn State College in mechanical engineering.

The Dredge and Pump division is located at the American Steel Dredge Co. office, recently opened at 134 North LaSalle Street, Chicago, in charge of Mr. Tyger.

In addition to the line of prefabricated sectional steel bolted barges and hulls, and standard dipper, clamshell and hydraulic dredges, a new line of 6, 8 and 10-inch suction dredges for sand and gravel recovery and small dredging operations has been announced. The bolted sectional steel design is unique in that complete dredges or barges may be transported by rail or truck and erected on remote inland lakes or above navigation barriers on rivers. The company produced many of these units for the Armed Forces during the war.

New Page Tooth Points

The new reversible center shank tooth point is a distinct improvement in the design and construction of tooth points for dragline service. The new hook bolt fastening is especially designed so that the bolt will not wear or tear loose from the point. This new tooth point will never come loose or work off if 25 per cent minimum bearing is maintained, both on the stub ends and on the shank above and below the bolt head, according to the manufacturer, Page Engineering Co., Chicago, Ill.

BCR Changes Quarters

On May 1, the administrative offices of Bituminous Coal Research, Inc., national research agency of the bituminous coal industry, were moved from 719 Oliver Building to 912 Oliver Building, Pittsburgh 22, Pa. More suitable office space has been leased on the ninth floor of the same building. The new offices will be occupied by Dr. Harold J. Rose, vice president and director of research; Elmer R. Kaiser, assistant to president and assistant director of research; William S. Major, development engineer; T. A. Day, special representative; Carl S. Westerberg, a new member of the BCR staff who will handle the agency's technical information service; and the secretarial and clerical employees.

The Pittsburgh telephone number of BCR will continue to be COurt 6800. Offices of Howard N. Eavenson, president, are located at 2720 Koppers Building, Pittsburgh 19, Pa. Office of C. A. Reed, secretary of BCR, is in 803 Southern Building, Washington 5, D. C. Carl S. Westerberg, a former employee of Utah Fuel Co., has been added to the Pittsburgh staff of the agency. He succeeds Ralph H. Hopp who resigned last year to become librarian of Battelle Memorial Institute, Columbus, O.

Southern Agents Named

Contracts have been signed between Ransome Machinery Company and the following Southern equipment companies for exclusive territorial distributorships of Ransome Blue Brute pavers and mixers: Burford-Toothaker Tractor Co., Montgomery, Ala.; Shaw Equipment Co., Dallas, Texas; Dempster Bros., Inc., Knoxville, Tenn.; Epperson & Co., Tampa, Fla.; Highway Equipment & Supply Co., Orlando, Fla.; Jackson Road Equipment Co., Jackson, Miss.

New Chief Engineer

Albert J. Hulse, formerly with Carnegie-Illinois Steel Corp. at Pittsburgh, has joined The Youngstown Sheet and Tube Co., Youngstown, Ohio, as chief engineer. He succeeds J. D. Jones who left the company about a year ago. Mr. Hulse, a native of Washington, D. C., was in Officers' Training School when World War I ended. He came to the Youngstown district in 1925 as chief draftsman for Trumbull Steel Co. in Warren, after serving as draftsman for several steel companies. Later, he became assistant chief engineer for the H. A. Brassert Co., consulting engineers of Chicago.

T. C. I. Official Promoted

Appointment of David Adams, assistant treasurer since last July, as assistant secretary and assistant treasurer of the Tennessee Coal, Iron and Railroad Co., has been announced by C. R. Sexton, secretary and treasurer.

Mr. Adams succeeds the late Terry E. Noell as assistant secretary of TCI, and also succeeds Mr. Noell as assistant secretary and assistant treasurer of the Tennessee Land Company and the Universal Exploration Company.

Mr. Adams, a native of Jackson, Ala., attended elementary and high schools in Jackson and was graduated from the University of Alabama with a B. S. degree in Commerce in 1923. From 1923 until 1940, he was with the Bank of Pine Apple, Ala., where he was vice-president and cashier when he left to become executive vice-president of the American National Bank at Gadsden, which position he left to join TCI last July.

New N. C. & St. L. Executive

At the regular quarterly meeting of the board of directors of The Nashville, Chattanooga & St. Louis Railway, held recently, W. K. Tate was elected vice president-traffic to succeed Charles Barham who is voluntarily retiring after fifty-nine years of service, the last forty-eight of which have been spent with the N. C. & St. L., according to announcement by T. A. Clarkson, Secretary.

Luminescent "Lucite" Sheeting Announced

New forms of "Lucite" acrylic resin containing luminscent pigments—a fluorescent type which glows when exposed to ultraviolet, or "black" light, and a phosphorescent type which glows in the dark after exposure to ordinary light—are announced by the Plastics Department of the Du Pont Company, Wilmington 98, Del. The company said the phosphorescent "Lucite" is now being investigated by the U. S. Coast Guard for large bands on channel markers and buoys to light them at night.

Sheets of "Lucite" containing luminescent pigments called phosphors are now being produced on a small scale, the company said, and are being evaluated for night use, both indoors and out. The sheets, will be shown publicly for the first time at the National Plastics Exposition in New York, April 22-27.

Banks Show Huge Assets

American banks have total assets of $179,117,240,000 as revealed by the Blue Book, the Rand McNally Bankers Directory. Of this total, $141,253,903,000 are, at present, invested in securities and loans. However, only $30,694,729,000 is represented by loans. That is only about 18% of total deposits, which are over $167,000,000,000, whereas individual banks sometimes have had loans totaling as much as 50% of their deposits. The other earning assets are Government securities to a total of nearly $102,000,000,000 and other securities to a total of over $8,500,000,000.

Says the publisher: "Figures as large as these have never before appeared in the Blue Book. While we have fewer banks than we had in 1921, their assets are tremendously larger and their facilities for lending to industry are greatly increased—increased to such an extent, as a matter of fact, that the limit of financing is not apparent."

Automatic Chucking Machine

A new air-operated, single spindle automatic chucking machine is annouunced by The National Acme Co., 170 E. 131st St., Cleveland 8, Ohio. Called their "Chuck-Matic" this automatic lathe is designed for heavy duty, high production metal turning operations on castings, forgings, and tubing parts up to 12 inches in diameter. The "Chuck-Matic" is engineered to perform such machining operations as, straight, internal or taper boring, form turning or form boring, external turning, forming, facing, and chamfering. Prominent features of this new automatic chucking lathe are represented as only 20 sq. ft. plant floor space displacement, "all carbide tooling" facilities, size and shape dimensions which make it unnecessary for operator to bend over when loading and unloading work, simple four-step operating sequence, and a control arrangement which forces the operator's hands from cutting zone when he starts the machine.

General Motors Payrolls Top Billion Dollars in 1945

Although sharply reduced by more than five weeks of shutdown at the end of 1945 as a result of the UAW-CIO strike, and by earlier temporary layoffs necessitated by reconversion and work stoppages in supplier plants, the average number of salaried and hourly-rate employes on General Motors' pay rolls for 1945 was 345,940 and total corporation pay rolls amounted to $1,007,563,689. This was announced by Alfred P. Sloan, Jr., chairman of General Motors, in a statement issued in advance of the report to the corporation's more than 425,000 stockholders.

These figures compare with an average of 465,617 salaried and hourly-rate employes and with total corporation pay rolls of $1,389,032,467 for the year 1944. The 1945 figures, considerably lower than anticipated due to the strike, also reflect the tapering off of war production that occurred between V-E and V-J Days as well as the abrupt halting of war work after V-J Day, Mr. Sloan stated.

The average number of hourly-rate workers employed by General Motors in the United States and the wage payments to those employes were as follows:

	1945	1944
Average number of hourly - rate employes working in United States	233,427	336,107
Total hourly - rate pay rolls in U. S. .	$668,143,805	$995,094,170

During the first 10 months of 1945 the average number of hours worked per week by the hourly-rate employes in GM plants in the United States was 43.8 compared with 45.5 for the first 10 months and 45.6 for the full year of 1944. For the prewar year of 1941 average hours were 40.7. Weekly earnings of hourly-rate employes in the United States averaged $55.90 for the first 10 months of 1945 as against $56.70 during the first 10 months and $56.93 for the full year of 1944. For the prewar year of 1941 the average was $43.41.

The average earnings for the first 10 months of 1945 were, therefore, at the annual rate of $2,900, which is estimated to be what annual earnings would have been but for the strike. This compares with annual pay rolls equivalent to $2,960 per hourly-rate employe, based on average employment in 1944, and $2,257 in 1941, the last peacetime year.

Four Win Cash Prizes

For his design of an unusual fixture employing Sylvania fluorescent lamps, Clarence J. Berry of Consolidated Gas, Electric Light & Power Co., of Baltimore won first prize in a contest recently held by Sylvania Electric Products Co., Ipswich, Mass. Second place went to E. M. Prims of Public Service Co. of Northern Illinois and third and fourth places respectively to Carter Lewis of St. Louis Union Electric Co. of Missouri and H. Stuart Thomas of Mississippi Power & Light Co., Greenville, Miss. First prize won $500, second $300, third $200 and fourth $100.

Southern Agents Named

R. A. Fergusson, president of Rust-Oleum Corp., Evanston, Ill., manufacturers of Rust-Oleum rust preventive, announces the appointment of three new general agents in the railway supply field: Waldo E. Bugbee, Alamo National Building, San Antonio; W. D. Jenkins, 1317 Praetorian Building, Dallas, and Frank M. Sweeney, 4136 Roland Ave., Baltimore.

Plastic Glass Announced

A new plastic product designed to take the place of glass in such installations as streetlamp globes, ticket windows and office partitions where the hazards of breakage are high, has been announced by E. I. du Pont de Nemours & Co., Wilmington 98, Del. The new product is described as being transparent sheets of Lucite acrylic resin which are shatter-resistant and have patterns formed on them as they are made. It will be available at the outset in twelve designs but a number of other designs are reported to be possible. Lightweight and variety of color are among the properties claimed for the material.

Aluminum Axle Produced

A light-weight, heavy-duty truck axle with aluminum housing, hubs, and brake shoes has been brought out by the Timken-Detroit Axle Company, of Detroit, Michigan. Timken's announcement of the commercial production of the new axle, called the "S-200-P," says it marks the first time that aluminum axles have been offered by any axle builder as a standard line of equipment. The "S-200-P" axle is available with two types of final drives: Hypoid-Helical Double-Reduction and 2-Speed Hypoid-Helical Double-Reduction, and weighs 220 pounds less than the same unit equipped with malleable iron parts.

Southern Staff Increased

Among personnel appointments announced by L. L. Andrus, vice president in charge of sales for American Foundry Equipment Co., 555 S. Byrkit St., Mishawaka, Ind., are three for the South: John Getzen has joined H. G. Mouat, district sales representative in the Birmingham area; Troy T. Alverson will be sales representative in a new Baltimore office; and John Nixon will have charge of the Atlanta sales office.

At the same time, Mr. Andrus announced that Davis G. Taylor has been appointed to the San Francisco Bay area and David E. Neustadt to Los Angeles. Mr. Getzen, a graduate of Georgia Tech spent several years in the Army, finishing as a colonel. Mr. Alverson is credited with wide industrial experience including such positions as general superintendent of Crane Co.'s Chattanooga plant, general manager of a Navy shell plant and assistant superintendent for Glenn L. Martin Co., Baltimore. Mr. Nixon who recently left the Navy as lieutenant commander has had a diversified career as junior engineer, college professor and football coach. He, too, is a graduate of Georgia Tech.

ILG Names Southern Office Managers

On the way toward prewar status in staffing branch offices of the Ilg Electric Ventilating Co., Chicago, Ill., four new appointments have been announced by P. D. Briggs, Vice-President and General Sales Manager.

F. H. Bigelow, named manager of the ILG office in Atlanta, is a graduate of the Armour Institute of Technology of Chicago. He served with Commonwealth Edison Co. of Chicago for two years and with a local air conditioning contractor in Memphis, Tennessee for five years. In 1937 he became manager of the ILG branch office in Memphis where he remained until his new appointment.

Replacing Mr. Bigelow as manager of the Memphis office is H. H. Wilson, recently released from the Navy. Mr. Wilson received a B. S. degree from the University of Tennessee in 1940 and worked a short time with the Bell Telephone Co. and the Federal Power Commission. Called as an ensign in the Naval Reserve in 1942, he rose to the rank of lieutenant, senior grade. Wartime service was concentrated in the fields of radar and radio engineering. He is a member of the Memphis Engineers Club.

In Knoxville, the ILG office has been reopened under the supervision of E. Lloyd Widner, manufacturers representative for the last twelve years. After attending Knoxville schools and Johnson Bible College, Mr. Widner gathered experience in the heating and ventilating field with C. M. McClung & Co.

In Louisville, Henry M. Lutes has been established as manager of the ILG branch office. Holding a B. S. degree from the University of Kentucky, in 1934 he became associated with the Columbus Heating and Ventilating Co. of Columbus, Ohio. Subsequently, representing the Minneapolis-Honeywell Regulator Co., the Gates Rubber Co., and the American Air Filter Co.

These moves bring the total number of ILG branch offices in principal cities to forty-three.

Martin Appoints Darrow for Public Relations

Richard W. Darrow has been appointed as director of Public Relations for Glenn L. Martin Co., Baltimore, Md., Glenn L. Martin, President announces. Mr. Darrow took over his new duties May 1, succeeding Avery McBee, who recently accepted a position with N. W. Ayer & Son in Hawaii.

Former newspaperman and aviation writer, Mr. Darrow has been Assistant to the President of the American Meat Institute, Chicago. Prior to that time he was assistant director of public relations for Curtiss-Wright Corp. in New York City.

Earlier, he had been manager of public and internal relations for Curtiss-Wright's Columbus, Ohio, airplane plant and assistant director of public and internal relations at Buffalo, N. Y.

TRADE LITERATURE

BUDA ENGINE CATALOG

The Buda Co., Harvey, Ill., has published a 12-page catalog featuring its new line of "One-Sixty-One" Series Diesel engines for automotive, industrial, and marine service. Illustrations show 1, 2, 3, 4, 6, and 8-cylinder models, ranging from 15 to 300 horsepower. The heavy-duty six and eight-cylinder Diesels are available in both standard and supercharged models. Material in the catalog includes pressure lubrication data, a discussion of Buda slow pressure combustion system, engine data table and other descriptive information relative to the application of the new Buda Diesels to power needs.

CHAIN BELT CATALOG

The complete line of Rex sanitation and liquid clarification equipment is presented in a new 44-page book now available from Chain Belt Co. of Milwaukee. Pictures, drawings, and diagrams are used throughout the book. Products illustrated and described in the bulletin include conveyor sludge collectors and Tow-Bro sludge removers, grit collectors and washers, Verti-Flo thickeners, skimmers, Aero-filters, Floctrol, rapid mixers, gravity waste water-oil separators, and water screens. Request bulletin No. 46-3 from Chain Belt Co., 1600 West Bruce Street, Milwaukee 4, Wisc.

OTISCOLOY BOOKLET

The Jones & Laughlin Steel Corporation have published a very attractive 16-page 2-color illustrated Otiscoloy booklet, giving technical information, suggested applications and other useful information of their new weight-saving J & L steel. Copies are available upon request by writing: Publicity Manager, Jones & Laughlin Steel Corporation, Pittsburgh 30, Pa. Otiscoloy is described as a high-tensile, low-alloy steel manufactured to meet the need for a readily weldable and easily fabricated, corrosion resistant steel of substantially greater strength than the standard carbon structural steels.

BULLETIN ANNOUNCES REFINER

Sprout, Waldron & Company, Muncy, Pa., manufacturers of industrial processing equipment, have developed a new rotary disc refiner, designed for an especially tough assignment in the Pulp and Paper Industry. An 8-page Bulletin (R-146), describes and illustrates with photographs and schematic drawings the application which this machine covers. Improved features and machine operation are discussed from the plant engineer's viewpoint.

B & O Reports Earnings

Net earnings of $15,901,401 are reported by The Baltimore and Ohio Railroad Company for the year 1945. Operating revenues are shown to have been $361,373,218, a reduction of $25,819,818 from 1944. Operating expenses for 1945 amounting to $296,661,547 are stated to have been the highest in the Company's history, and to have resulted chiefly from increased material costs and charges on account of amortization of defense projects. Total taxes for the year amounted to $20,074,255.

The report, issued by R. B. White, president of the Company, announced that the Company's Adjustment Plan had received the approval of the Interstate Commerce Commission, the Company's bondholders and a Special Federal Court.

Mr. White also explained that nearly $27,500,000 was invested in 1945 in the construction of new and improved track, bridges and other facilities, and in the acquisition of new locomotives and rolling stock. The result has been more efficient and economical operations, together with improved service for patrons of the railroad.

PLANT PICTORIALLY DESCRIBED

A new brochure entitled "100 Acres of Skill and Steel," publisned by Scullin Steel Co., St. Louis, Mo., depicts an "easy-chair" trip through the firm's steel foundry. Illustrated with photographs, the 20-page booklet shows the charging of open hearth furnaces, pouring into molds, heat treating and the formation of finished castings. A section of the booklet is also devoted to illustration of a variety of Scullin wartime products. Copies can be had by writing the company, 6700 Manchester St., St. Louis, Mo.

EQUIPMENT POLICY PAMPHLET

Machinery & Allied Products Institute has published an introductory chapter of its forthcoming book urging a dynamic equipment policy for America. The introductory chapter, issued in pamphlet form, deals with sections on Replacement Policy, Replacement in Great Britain, American Practice, Depreciation Policy, Principal Questions at Issue, Theory and Practice, Depreciation and Replacement Benefits of Improved Depreciation Policy. Copies are available at cost from the Institute, 720 20th St., Washington 6, D. C.

Industrial Expansions

(Continued from page 57)

Burning Co. let contract for factory, cost $14,000.

ST. LOUIS—Factory—Dorothy-Perkins Co. let contract at $153,000, for factory.

ST. LOUIS—Factory—Chase Bag Co. let contract for factory, cost $400,000.

ST. LOUIS—Building—Francis O'Hare let contract at $24,000 for foundry.

ST. LOUIS — Showroom — J. Rothman let contract for showroom, cost $12,000.

ST. LOUIS—Addition—Jos. Pavelka let contract at $20,000, for addition to machine shop.

ST. LOUIS—Addition—Sterling Aluminum Products Co., Inc., let contract for addition to foundry; cost $25,000.

ST. LOUIS—Building—J. W. Kopman let contract at $140,000 for auto repair and office building.

NORTH CAROLINA

ASHEBORO—Plant—National Carbon Co., plan plant for manufacture of plastic Krene.

ASHEBORO—Plant—National Chair Manufacturing Co. let contract for $225,000 bedroom furniture plant, work underway.

ASHEVILLE — Addition — Seven Up Bottling Co. has permit for $18,000 addition to plant.

BURLINGTON — Building — Alamance Laundry let contract at $25,000 for laundry building.

BURLINGTON—Building—Contract let at $80,000 for building, Baker-Cammack Hosiery Mills.

BURLINGTON—Expansion—May McEwen Kaiser Co. plans addition to manufacture no-seam nylon stockings.

CHARLOTTE—Equipment—JMC Purchasing Agency, incorporated with capital of $100,000; will deal in industrial equipment.

CHARLOTTE—Expansion—Larkwood Hosiery Mill let contract at $125,000 for expansion of plant.

CHARLOTTE — Laundry — Self-Service Laundry, incorporated with capital of $100,000, plans laundry.

CHARLOTTE — Building — Mecklenburg Motor Co. let contract at $30,000 for building.

CHARLOTTE — Warehouse — Standard Ice & Fuel Co. let contract for warehouse.

CHARLOTTE—Warehouse—Sterchi Furniture Co. let contract at $115,000 for warehouse.

CHARLOTTE — Landing System — Civil Aeronautics Administration plans installation of instrument landing systems, Douglas Airport, cost approximately $50,000.

DURHAM—Building—Tucker Motor Co. let contract for $50,000 garage.

DURHAM—Hosiery Mill—Contract let at $40,000 for Durham Hosiery Mill.

DURHAM—Plant—Liggett and Myers Tobacco Co., plans $3,000,000 cigarette factory.

ERWIN—Steam Plant—Erwin Cotton Mills let contract for steam plant.

GASTONIA — Bus Station — Queen City Coach Co. plans construction of bus station.

GREENSBORO—Plant—Guilford Dairy Cooperative Association plans $250,000 plant for production of milk, ice cream and other dairy products.

GREENSBORO — Building — Carolina Willys Co. let contract at $45,000 for building.

GREENSBORO — Building — Wilder Concrete Products Co., Inc., plans $50,000 concrete products plant.

GREENSBORO—Expansion—New building for spinning and weaving of synthetic fabrics being built for Revolution Cotton Mills.

GREENSBORO — Expansion of Plant — Contract let for expansion of plant for Southern Webbing Mills, Inc.

GREENSBORO — Warehouse — Distribut-

(Continued on page 60)

Southern Industrial Expansions

(Continued from page 59)

ng warehouse contracted for Strietman Biscuit Co., at $50,000.

GREENSBORO—Office Building—Contract let for office building, addition to mill, Greensboro Overall Co., owner.

HENDERSONVILLE—Addition—The Grey Hosiery Mill has building permit for addition.

HICKORY—Building—Contract let at $76,600 for telephone building, for Hickory Telephone Co.

HICKORY — Extension — Contract let for extending freight depot of the Southern Railway System.

HIGH POINT — Building — Tomlinson of High Point let contract at $140,000 for dry kiln building, finishing and store rooms, additions.

HIGH POINT — Expansion — North State Telephone Co. has launched expansion and improvement program costing approximately $500,000.

MORGANTON—Bus Station—Queen City Coach Co. let contract for bus station.

MOUNT AIRY — Plant — Southern Frozen Food Locker, Inc. let contract at $60,000 for freezer locker and cold storage plant.

RALEIGH — Addition — Seven-Up Bottling Co., Raleigh, N. C., let contract for addition to present plant.

REIDSVILLE—Power Plant and Garage—American Tobacco Co. let contract for power plant and garage.

SALISBURY — Building — Zenith Chemical Co. let contract for tractor sales and service building.

STATESVILLE—Building—Contract let for new weave building for Phoenix Mills, Inc.

SWEPSONVILLE—Plant—Virginia Mills, Inc., let contract for manufacturing plant.

VALDESE—Expansion—Brinkley Lumber Co. has contract for expansion program for Waldensian and Pilot Hosiery Mills.

VALDESE — Building — Lewis Walker let contract for sales service building.

WINSTON-SALEM—Plant— R. J. Reynolds Tobacco Co., Winston-Salem, let contract for redrying plant.

SOUTH CAROLINA

ANDERSON—Enlargement—Ottaray Textiles, Inc., plans spending $100,000 to enlarge plant.

BATH—Bath Mill Addition—Addition to Bath Mills planned

GREENVILLE — Building — Sitton-Mauldin Buick Co. let contracts for auto sales building, at $20,000.

GREENVILLE — Warehouses, Etc. — Poe Hardware Co. and Poe Piping and Heating Co. negotiating for a site for two warehouses and an office building.

GREENVILLE—Auto Sales Building—Sitton-Mauldin Brick Co. let contract at $20,000, for sales building.

GREENVILLE—Hosiery Mill—Contract let for hosiery mill for Asheworth Brothers, Inc.

HARLEYVILLE—Plant—Carolina Cement & Lime Co. let contract at $1,000,000 for new manufacturing plant.

WALTERBORO — Plant — Seven-Up Bottling Co. received low bid for construction of bottling plant.

TENNESSEE

BROWNSVILLE — Factory — Brownsville Development Corp. let contract for building to house glove factory, cost $140,000.

CHATTANOOGA — Expansion — Wheland Co. plans expenditure of approximately $1,000,000 for expansion of foundry operations.

CHATTANOOGA — Addition — American Manufacturing Co. plans $22,000 factory addition.

CHATTANOOGA — Expansion — Tennessee Products Corp., Nashville, plans $1,950,000 plant expansion.

NASHVILLE — Repairs — Washington Manufacturing Co. plans to remodel and repair factory building; cost $100,000.

NASHVILLE—Plant—Ferro Enamel Corp. of Cleveland, Ohio, plans plant in Nashville for production of materials to be used in porcelain enameling, estimated cost $150,000.

NASHVILLE—Building—Contract awarded at $75,000 for sales building by William M. Liddon.

OAK RIDGE—Plant — Maj. Gen. Leslie R. Groves announced Government plans expending approximately $2,500,000 for expansion of experimental laboratories for harnessing atomic energy for generation of peacetime power; Dr. Charles Allen Thomas, vice-pres. and technical director of Monsanto Chemical Co., will be in charge.

TEXAS

Gas—The Federal Power Commission received application by Trans-Continental Gas Pipe Line Co., Inc., of Longview, Tex., for authority to convert the "Big Inch," the "Little Big Inch" and "Southwest Emergency" pipelines to the transportation of natural gas to Pennsylvania, New Jersey and New York, application states Trans-Continental has offered War Assets Corp., $40,000,000 for the lines.

Pipeline—Big Inch Gas, Inc., New York City, submitted offer of $40,000,000 for "Big Inch" pipeline.

Plant—The Texas Co., 135 E. Second St., New York, plans large plant to produce high octane gasoline from natural gas; $20,000,000.

STARR COUNTY — Dam — International Boundry and Water Commission, considering Falcon dam site, in Starr County, preliminary estimated cost of dam and power plant, $36,000,000.

ALVIN—plant—Stanolind Oil and Gas Co., Houston, Texas. Let contract at $2,500,000, for Gasoline Plant near Alvin.

AMARILLO—Building—Plains Plumbing Co.,will build a $20,000 business building.

AMARILLO—Building—Leland W. Abbott plans business building.

AMARILLO—Building—C. Keith will build sales and service building, cost $50,000.

DALLAS—Remodeling—White Motor Co., let contract for remodeling business building.

DALLAS—Building— G. & N. Motor Co., plans sales and service building; cost $40,000.

DALLAS—Office and Factory—Hugh E. Prather, Jr. let contract at $60,000, for office and factory building.

DALLAS—Warehouse—Dallas Union Depot Co., Tyler, Texas let contract at $40,000 for warehouse.

DALLAS—Expansion—Lone Star Gas Co., plans $8,250,000 expansion for 1946.

DALLAS—Warehouse & Factory—Pollock Realty Co. let contract for factory and warehouse.

FORT WORTH — Warehouse — Lydick Roofing Co., Fort Worth, Tex., let contract at $40,000, for warehouse building.

FORT WORTH — Addition — American Asphalt Co., let contract at $25,000, for addition to factory.

FORT WORTH — Expansion — Southwestern Bell Telephone Co., has building permits totaling $100,500 for expansion of central switching plants in Arlington Heights and North Fort Worth.

FORT WORTH — Warehouse & Office — General Engineering Corp., Fort Worth, Tex., let contract at $25,000, for shop, warehouse, and office.

FORT WORTH — Building — Lee Tire & Rubber Co., let contract at $15,000, for business building.

FORT WORTH — Buildings — Ray Woods Motor Co., Dallas, received low bid at $72,993 for paint and body building.

GRAND SALINE — Plant — Lee Dingle, Inc., let contract at $43,000, for canning plant.

HOUSTON—Warehouse—Magnolia Co., let contract for warehouse, cost approximately $100,000.

HOUSTON—Reservoir—$1,000,000 funds approved by Senate for Buffalo Bayou Reservoir, cost approximately $15,812,900.

HOUSTON — Warehouse — Houston Barrel Co., let contract at $70,000 for warehouse.

HOUSTON—Office Building—Wallace Co., Inc., let contract at $70,000, for office building.

HOUSTON — Building — Preston Machine Tool Sales Co., let contract at $25,000, for machine shop.

HOUSTON—Building—Shell Oil Co., let contract for building.

HOUSTON — Building — Shell Chemical Corp. let contract for laboratory and office building, cost approximately $300,000.

HOUSTON — Improvements — Southwestern Bell Telephone Co., will expend $12,300,000 for expansion and improvements.

HOUSTON—Bank—Hampton Oaks State Bank, plans bank building, cost approximately $50,000.

HOUSTON—Plant—National Biscuit Co., has acquired 19 acres for erection of plant, cost $4,000,000.

JASPER — Addition — City, Marvin P. Hancock, Mayor, let contract for additions and extensions to present electric power plant, cost approximately $175,000.

PALESTINE—Building—W. B. Flanagan, Jr., will build auto sales and service building.

PORT ARTHUR — Enlarging — Southwestern Bell Telephone Co., plans expending approximately $613,000 in enlarging telephone system.

SAN ANGELO—Building—Geo. Speer let contract at $20,000, for business building.

SAN ANGELO — Dam & Reservoir — Senate appropriation subcommittee has approved $2,000,000 to begin the $6,800,000 San Angelo dam and reservoir project.

SAN ANTONIO—Building—Ivan Maddox, is constructing a mattress factory at 8409 Fredericksburg Road.

SAN ANTONIO — Radio Station — San Antonio Express and Evening News plans broadcasting station.

SAN ANTONIO — Building — Quality Laundry Co., let contract for laundry building.

SHERMAN—Extension—Quaker Oats Co., let contract for plant improvements and extensions, cost $40,000.

UVALDE—Factory—Carl Szafranski plans ice cream factory and milk processing depot.

WACO—Dam—Senate appropriations subcommittee has approved $3,000,000 for initiating construction of Whitney Dam Project, which will cost approximately $20,000,000.

VIRGINIA

LYNCHBURG—Expansion—Mead Corporation, let contract for addition to plant, cost $30,000.

RICHMOND — Improvements — Virginia Telephone and Telegraph Co., improvements costing $1,100,000.

ROANOKE — Modernization—Norfolk and Western Railway plans modernizing station, at cost of approximately $350,000.

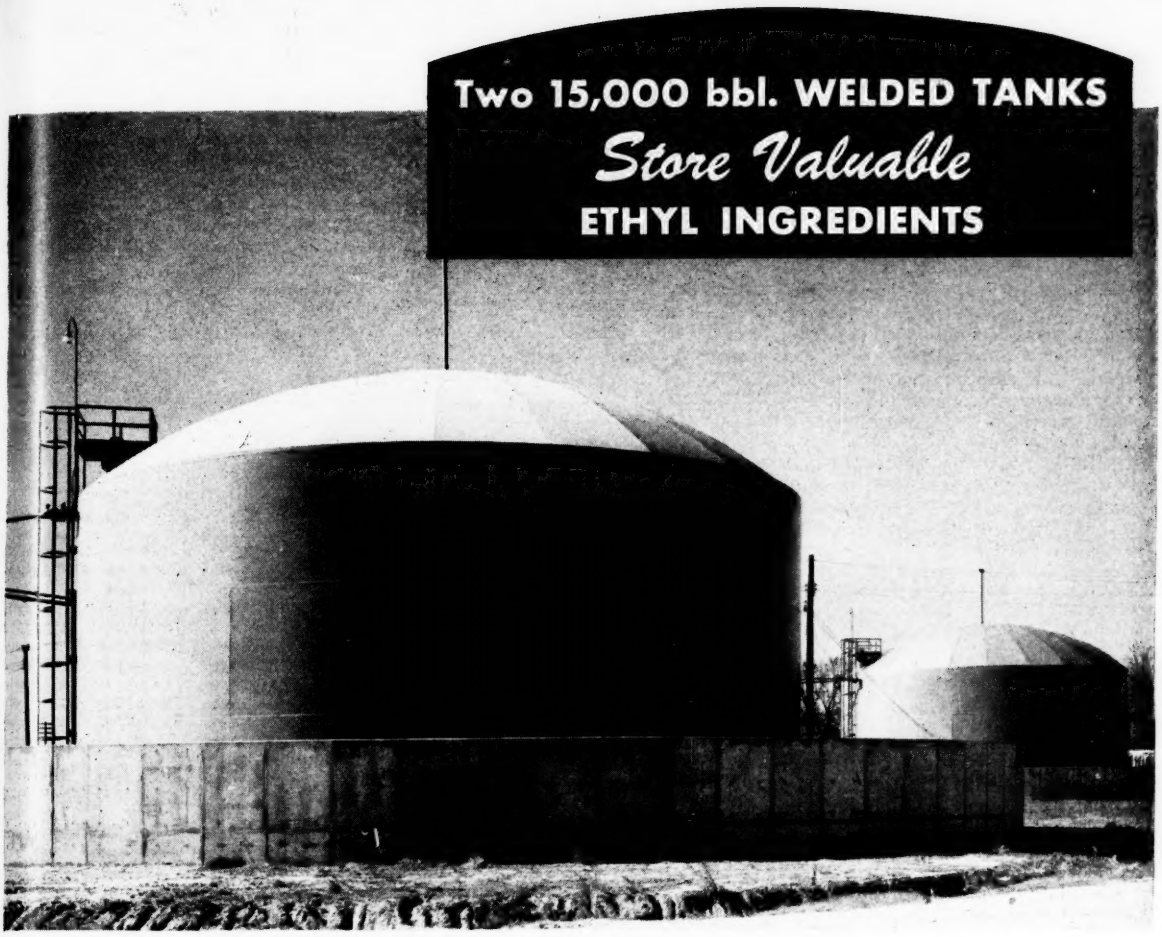
Link-Belt Reports Progress

The 1945 annual report of Link-Belt Company, issued by its president W. C. Carter, reveals net profit for the year of $3,003,521.73, equivalent to $3.72 per share on 806,930 shares of outstanding common stock. The result compares with net income of $3,264,141.53 for the year 1944. Total assets of the company are shown to be $40,257,797.85, equal to $49.89 per common stock share.

In the report, presented in an attractive brochure of 40 pages, Mr. Carter points out that the firm has had over seventy years of successful growth; that there are now 6,021 Link-Belt stockholders; and that these represent every one of the 48 states as well as ten territorial and foreign areas.

Mr. Carter also disclosed for the first time that along with other extensive war production the firm has been engaged in important work in connection with the Atomic Bomb project.

The report shows a large backlog of work existing and explains that government cancellation of contracts after V-J Day has been more than made up by civilian orders. These orders are shown to be widely distributed among Link-Belt's diversified products which include materials handling equipment, power transmission machinery, chains and sprockets, shovels, draglines and cranes, ball and roller bearings and automatic stokers. In addition to regular products, the firm designs special machinery for unusual problems involving the handling and preparation of materials.



The Ethyl Corporation recently installed these two 15,000-bbl. welded tanks at its Louisiana plant to store Ethyl fluid or its ingredients. These materials are valuable and every precaution is taken not to lose a single drop.

The tanks shown above provide storage facilities where safety and dependability are paramount. They are supported 4 ft. 3 in. above the ground on parallel concrete piers arranged so that the welded joints in the bottom are in the open and accessible for inspection. The roofs are of self-supporting dome type. The bottoms cone downward 6 in. at the center to facilitate emptying and cleaning. The specific gravity of the contents is appreciably more than 1, making it necessary to use 1⅛ in. bottom plates and proportionately heavy shell plates.

We design and fabricate all types of storage tanks for handling and storing liquids and gases. They include flat-bottom storage tanks, elevated water tanks, spherical and spheroidal pressure storage tanks and cylindrical pressure vessels. Write our nearest office for quotations, outlining your requirements as to capacity, size, location and kind of product to be stored.

CHICAGO BRIDGE & IRON COMPANY

Atlanta 3 .....2145 Healey Building	Chicago 4 .....2106 McCormick Building
Birmingham 1 .....1530 North Fiftieth Street	San Francisco 11 .....1240-22 Battery St. Building
Houston 1 .....5614 Clinton Drive	Philadelphia 3 .....1619—1700 Walnut St. Building
Tulsa 3 .....1611 Hunt Building	Los Angeles 14 .....1417 Wm. Fox Building
New York 6 .....3313—165 Broadway Building	Washington 4 .....703 Atlantic Building
Cleveland 16 .....2216 Guildhall Building	Detroit 26 .....1510 Lafayette Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Southern Contracts Total $148,911,000 in March

(*Continued from page* 53)

$ 12,594,000	Public Building	$ 26,653,000
$ 23,229,000	Engineering	$ 13,115,000
$ 35,331,000	Highways	$ 5,743,000
$148,911,000	Grand Total	$105,628,000

Complexion of the construction picture, however, is slated for a drastic change under Veterans' Housing Program Order 1 issued March 26 by the Civilian Production Administration. Start of construction on buildings and certain structures is prohibited without specific authorization.

The term "structure," does not include roads, streets, railway tracks, bridges, tunnels, subways, pipelines and utilities, dams, canals or drainage or irrigation ditches.

The order also does not apply to work on construction projects of the Veterans' Administration, including those being built by the Corps of Engineers for that agency or the remodeling of a building or any part of a building leased to the Veterans' Administration or Public Buildings Administration for use of the veterans' agency.

Aim of the restriction is to eliminate several billion dollars worth of new construction and repairs from the building program this year and to thus accelerate erection of homes for veterans. Materials are to be channeled into low-cost veterans homes, the 1946 goal being 1,200,000 such houses.

A list of the active Southern industrial projects follows:

LaGloria Corp., $14,000,000 synthetic gasoline plant, Brownsville, Texas area.

Southern Paper Board Corp., $9,000,000 kraft paper mill, Port Wentworth, Savannah, Ga.

Ford Motor Co., $6,000,000 plant, Hapeville, Ga.

Johns-Manville Corp., $5,000,000 insulating board plant, Natchez, Miss.

Pekin Wood Products Co., $2,000,000 station wagon body plant, Helena, Ark.

Southland Paper Mills, Inc., $2,000,000 plant addition, Lufkin, Texas.

Public Service Board, $2,000,000 generating plant enlargement, San Antonio, Texas.

Mojud Hosiery Co., Inc., $1,500,000 expansion and improvement, Greensboro, N. C.

Western Electric Co., $1,500,000 addition, Baltimore, Md.

Shreveport Times, $1,250,000 publishing plant and radio station, Shreveport, La.

International Paper Co., $1,050,000 additions and improvements, Mobile, Ala.

Sun Oil Co., $1,000,000 natural gasoline plant as part of $4,000,000 conservation program in South Texas.

Metal Goods Corp., $1,000,000 plant, Houston, Texas.

Boyle-Midway, Inc., $600,000 manufacturing plant, Doraville, Ga.

Copland Fabrics, Inc., $600,000 expansion program, Burlington, N. C.

Texas Co., $500,000 marine terminal, St. Louis, Mo.

Missouri Farmers Association, $500,000 milk processing plant, Monett, Mo.

Welch Grape Juice Co., $500,000 plant enlargement, Springdale, Ark.

General Motors Corp., $500,000 branch plant, Jacksonville, Fla.

Carnation Milk Co., $475,000 milk and ice cream plant, Houston, Texas.

Carolene Products Co., $300,000 "filled milk" plant, Monett, Mo.

Grand Prize Brewery, $300,000 addition, Houston, Texas.

National Brewing Co., $300,000 stockhouse, Baltimore, Md.

Tennessee Coal, Iron & Railroad Co., $300,000 warehouse, Memphis, Tenn.

Lever Brothers Co., $250,000 plant additions, Baltimore, Md.

Finkbeiner & Co., $250,000 meat packing plant, Pine Bluff, Ark.

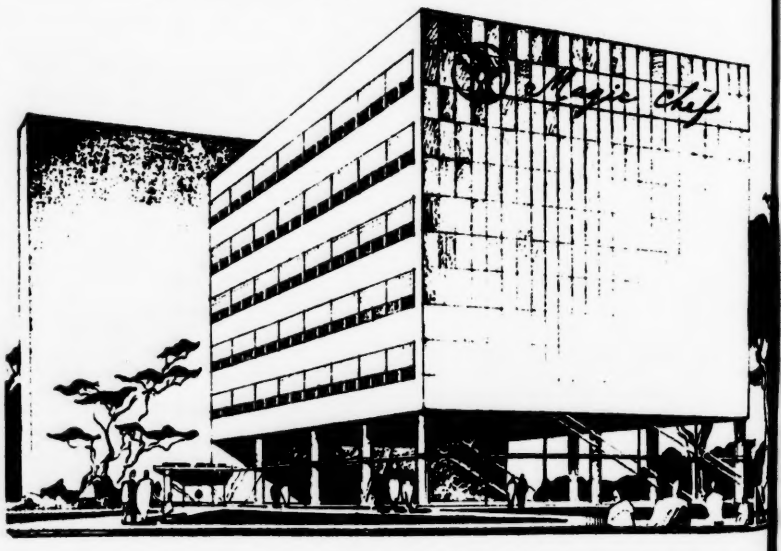
Kroehler Furniture Manufacturing

(*Continued on page* 64)

Southern Construction By States

	March, 1946 Contracts Awarded	March, 1946 Contracts to be Awarded	Contracts Awarded First Three Months 1946	Contracts Awarded First Three Months 1945
Alabama	$ 2,193,000	$ 23,794,000	$ 8,304,000	$ 78,072,000
Arkansas	6,574,000	5,098,000	8,848,000	975,000
District of Columbia	602,000	8,205,000	4,422,000	12,120,000
Florida	13,698,000	6,770,000	36,380,000	18,443,000
Georgia	5,434,000	10,540,000	29,808,000	6,074,000
Kentucky	3,692,000	2,160,000	31,050,000	3,972,000
Louisiana	3,423,000	22,306,000	16,939,000	21,599,000
Maryland	15,098,000	23,418,000	34,781,000	10,273,000
Mississippi	8,031,000	14,200,000	29,106,000	11,130,000
Missouri	6,803,000	6,116,000	7,993,000	4,338,000
North Carolina	7,889,000	22,619,000	17,772,000	6,322,000
Oklahoma	13,004,000	10,414,000	20,952,000	2,010,000
South Carolina	2,322,000	12,768,000	8,169,000	3,904,000
Tennessee	9,063,000	13,088,000	14,984,000	17,182,000
Texas	46,741,000	78,545,000	102,001,000	102,169,000
Virginia	2,668,000	18,142,000	5,317,000	11,881,000
West Virginia	1,676,000	4,159,000	3,084,000	179,000
TOTAL	$148,911,000	$282,342,000	$379,910,000	$310,689,000

American Stove Co., St. Louis, Mo. manufacturers of Magic Chef gas ranges, will centralize activities in a new building to embrace the latest in structure and aesthetic designs by Harris Armstrong, Kirkwood, Mo. architect, Neal J. Campbell, designing engineer, and Ferris and Hamig, mechanical engineers. Materials to be used include reinforced concrete, limestone facing and brick. One wall will be a new type glass that bends the sun's rays upward. Lights will be recessed; Radiant heat will be delivered through acoustical tile. Interior partitions will be prefabricated and interchangeable.



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It belongs to people in all walks of life in cities, towns and villages throughout America.

The money comes from the savings of the many.

For only the many—that is, hundreds of thousands of small investors—have the money to own such a big business.

More than half of its 700,000 stockholders are women.

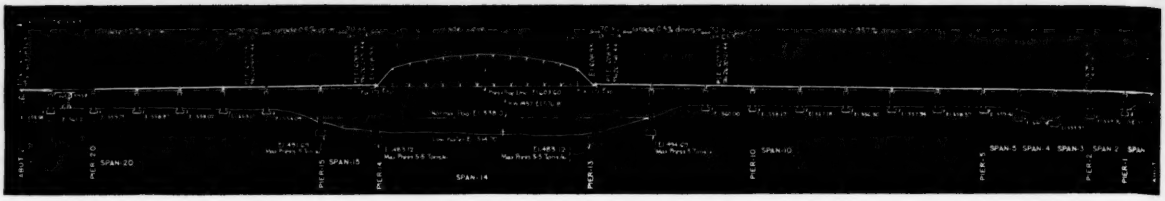
About one stockholder in thirteen is a telephone employee.

The average number of shares held per stockholder is 30. More than 210,000 stockholders own five shares or less.

No one owns as much as one-half of one per cent of its stock.

About one person in every 200 in the United States is a part owner of the Bell System.

BELL TELEPHONE SYSTEM



Above—Baltimore & Ohio Railroad is spending approximately $2,000,000 for construction of a new bridge over the Great Kanawha River at Point Pleasant, W. Va. Of reinforced concrete steel construction, the span will have an overall length of 2,470 feet, including approaches and will require approximately 3,000 tons of steel, 15,000 cubic yards of concrete and 20,000 lineal feet of piling.

Below—Metal Goods Corp., St. Louis metal concern with branches at Kansas City, New Orleans, Dallas and Houston, has awarded the contract for erection of a new Dallas building and has purchased site for a new warehouse at Houston. Frazier-Davis Construction Co., St. Louis, is the contractor and Frank Cann, also St. Louis, is the architect. Completion is scheduled for late July. The warehouse is 380 feet long and has trackage facilities sufficient for three railroad cars. The building will be concrete to a height of six feet, enclosed in glass for an additional 12 feet with asbestos siding above that level. Equipment will include overhead cranes.

Southern Contracts Total $148,911,000 in March

(*Continued on page* 62)

Co., $250,000 furniture factory, Borden Co., $250,000 ice cream and distribution plant, Jackson, Miss.

Sanders Co., Inc., $225,000 office and sales building, Jackson, Miss.

B. Green & Co., $250,000 warehouse, Baltimore, Md.

Lassiter Press, Inc., $225,000 expansion program, Charlotte, N. C.

Kentucky Rock Asphalt Co., $200,000 improvements, Louisville, Ky.

Rawlings Manufacturing Co., $200,000 factory, St. Louis, Mo.

McElroy Motor Co., $200,000 sales and service building, Birmingham, Ala.

Aines Farms Dairy Co., $200,000 plant, Kansas City, Mo.

Dempster Brothers, Inc., $200,000 plant, Nashville, Tenn.

Folger & Co., $200,000 plant expansion, Houston, Texas.

General Motors Corp., $175,000 building, Memphis, Tenn.

Lone Star Bag & Bagging Co., $160,000 plant addition, Houston, Texas.

Missouri Portland Cement Co., $154,000 storage and packing facilities, Memphis, Tenn.

Geophysical Service, Inc., $150,000 building, Dallas, Texas.

Holeproof Hosiery Co., $150,000 plant, Quitman, Miss.

Shaw & Barnes, $100,000 bottling plant, Dallas, Texas.

WDBO, $100,000 broadcasting station, Orlando, Fla.

Marshall & Bruce Co., $100,000 plant addition, Nashville, Tenn.

Berkeley Pump Co., $100,000 plant, Chamblee, Ga.

Hudson Paper Co., $5,000,000 paper plant, Palatka, Fla.

Adolphus Rice Milling Co., $100,000 warehouse, Houston, Texas.

Nehi Bottling Co., $100,000 plant, Greenville, S. C.

International Rubber & Plastics Co., $100,000 plant, Houston, Texas.

Lure Ice Cream Co., $100,000 ice cream plant, Washington, Ga.

International Minerals & Chemical Corp., phosphate plant, Bartow, Fla.

Belknap Hardware & Manufacturing Co., $300,000 building, Louisville, Ky.

Kieckhefer Container Co., $500,000 plant, New Orleans, La.

Industrial Awards

(Including Private Utilities)

	March, 1946		Contracts Awarded First Three Months 1946
	Contracts Awarded	Contracts to be Awarded	
Alabama	$ 675,000	$11,685,000	$ 1,853,000
Arkansas	1,000,000	2,800,000	2,625,000
Dist. of Col.	.....	.....	1,890,000
Florida	6,050,000	521,000	11,762,000
Georgia	2,314,000	3,188,000	17,675,000
Kentucky	.....	500,000	.....
Louisiana	574,000	3,050,000	4,852,000
Maryland	4,847,000	1,779,000	7,466,000
Mississippi	6,712,000	725,000	23,474,000
Missouri	3,702,000	1,530,000	4,271,000
N. Carolina	1,175,000	4,010,000	4,380,000
Oklahoma	.....	200,000	.....
S. Carolina	467,000	401,000	1,257,000
Tennessee	150,000	1,129,000	1,880,000
Texas	29,360,900	5,585,000	39,706,000
Virginia	200,000	3,560,000	474,000
W. Virginia	1,325,000	.....	1,325,000
TOTAL	$58,551,000	$40,663,000	$124,890,000

Cigarette Paper

(*Continued from page* 47)

150 men are on their toes each hour of the day and night to see that nothing is out of order which might cause a severe breakdown. With 2,500 motors and subsidiary equipment to keep in order, the staff of the electrical department alone makes about 8,000 inspections every 24 hours.

A vital cog in the chain of cigarette paper production is the control laboratory. It is here that samples of the material in process are continuously tested to avert any possible mistakes in production. The fundamental research department and the department of plant research are constantly looking for new and better techniques, both in manufacturing and in the development of better flax.

A word on the employee situation is in order. A trained personnel eliminates much dissatisfaction arising from square pegs in round holes. Care of employee health, safety directors, and a well organized recreation department enhance working conditions. Leisure hours are enriched by the corporation's recreational center, a former boys' camp which was purchased last summer.

Here, then, is a bird's eye view of the fulfillment of two industrial dreams—the manufacture of cigar-

(*Continued on page* 66)

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Watts Building **Birmingham, Ala.**

THE BALTIMORE AND OHIO RAILROAD COMPANY

SUMMARY OF 1945 ANNUAL REPORT

TO ALL SECURITY HOLDERS:

The year 1945 was important to all security holders of the Company. The Interstate Commerce Commission, the Company's bondholders, and a Special Federal Court—each placed their stamp of approval on the Company's Adjustment Plan. On March 13, 1946, the Court entered its formal Decree, directing that the Plan be put into effect.

Operating revenues of $361,373,218 for 1945, were $25,819,818 less than in 1944. Operating expenses of $296,661,547 were the largest in the Company's history, principally because of increased material costs and the charge of $18,571,715 on account of amortization of defense projects. This resulted in a tax credit of $14,990,255. Total taxes paid were $20,074,255. Statement of earnings, expenses and disposition of net earnings for 1945 follows:

EARNINGS:	*Year 1945*	*Compared with 1944*
From transportation services performed	$361,373,218	D $25,819,818
From dividends, interest, rents, etc.	6.790.888	D 950,407
Total	$368.164.106	D $26.770.225
EXPENSES:		
Payrolls, fuel, material, etc.	$296,661,547	I $ 9,592,793
Taxes	20,074,255	D 28,910,590
Equipment and Joint Facility Rents	7.984.975	D 1,838.082
	$324,720,777	D $21,155,879
All other—interest on debt, rents, etc.	27.541.928	D 601,309
Total	$352.262.705	D $21.757.188
Net Earnings	$ 15.901.401	D $ 5.013.037
DISPOSITION OF NET EARNINGS:		
Additions and betterments	$ 3,553,498	D $ 1,352,612
Sinking funds—to retire debt	7,241,082	D 815,853
Other appropriations	8,411	D 1,723
Added to the Company's surplus	5.098.410	D 2.842.849
Total	$ 15.901.401	D $ 5.013.037

Nearly $27,500,000 was invested in 1945 in the construction of new and improved track, bridges, signals, yards and other facilities, and in the acquisition of new and improved locomotives and freight and passenger cars. This resulted in additional sources of traffic, more efficient and economical operations, and improved service for B&O patrons.

A program of traffic development started several years ago is being intensified, and research projects promising heavier tonnage and more efficient locomotive performance are making encouraging progress.

Equipment obligations issued during 1945 to finance the purchase of new equipment amounted to $15,799,600; equipment obligations retired were $5,183,560. Total equipment obligations outstanding, December 31, 1945, were $39,105,577. This was $10,616,040 more than at the end of 1944. Other debt was reduced a total of $10,601,431 in 1945. THE NET DEBT REDUCTION, 1942-1945 INCLUSIVE, WAS $105,021,-264.

Of the 17,857 employees of the B&O who entered the armed forces, more than 200 lost their lives. Of the rest, nearly 7,000 have resumed their employment with the Company, and nearly 1,300 additional servicemen have also been employed.

The President and Directors acknowledge with appreciation the continued cooperation of stockholders, Government agencies, shippers, and the officers and employees of the Company.

R. B. WHITE, *President*

Cigarette Paper

(*Continued from page* 64)

ette paper from raw flax, and the location of this manufacture close to the great cigarette factories of North Carolina. It has not only blazed new trails in industrial research, but has added greatly to the social and economic wealth of western North Carolina.

Fort Worth Reconversion

(*Continued from page* 38)

in the South. A daily capacity of 8,000 barrels of flour and 1,500 of corn meal is processed through three great milling companies. Thirty-one hundred tons is the daily output of the feed mills alone and the grain storage space will accommodate 25,560,000 bushels. In 1944, nearly 75 per cent of the state's bumper wheat crop—74,746,000 bushels valued at $104,644,000—was turned through the city's facilities.

Related to these industries is the manufacturing firm—a new postwar plant—McCluney & Brown Manufacturing Company, currently engaged in the manufacture of farm equipment and machinery. Products of the plant will be marketed throughout the Southwest's six-billion dollar market and in Mexico.

The city boasts three of the nation's largest manufacturing concerns of house and farm trailers. The plant of Fleet Trailers, Inc., represents birth of war aftermath and is a new instead of a reconversion project. Two established trailer concerns picking up production again are the Hobbs Manufacturing Company and the Hyde Corporation. An assembly plant for the deluxe trailer coaches of the Travelite Trailer Company of Chicago has been opened in the city, and will give the public wide choice of traveling homes.

During war years the officials of the American Manufacturing Company believe its peak of 2,800 employes made more different kinds of shells than any other single plant in the nation, with a record in excess of ten million of nine varieties.

This big steel producing plant together with Texasteel Manufacturing Company, Texas Steel Company, Mechanical Manufacturing Company, and Peterson Engineering and Manufacturing Company all made shells or shell parts during the war years, but timely enough have con-

verted their production lines into manufacture of needed equipment in the oil industry. Market possibilities in this field alone are almost infinite since the city is geographically located in the center of one of the world's largest oil producing regions. To this end four petroleum refineries and several grease plants produce gasoline and other petroleum products for the Southwest.

Outstanding in reconversion items of these five companies is the "Mechanical Mule" made by the Mechanical Manufacturing Company. The ingenious device is designed to assist the derrick man in his drilling work of oil wells. The company plans to spend $100,000 for additional equipment in the near future in order to effect production of high pressure valves and measuring line wipers—items sorely needed by the oil industry today after the overwork of machinery during the war.

The Peterson Engineering Company and Manufacturing Company plant diversifies its manufacturing. During the turnover period from the making of mortar shells for the Army to the oil field equipment it is making today, the plant turned out plastic, metal and wood items—among which were such unique items as plastic buttons and a child's toy made of sheet metal and twisted wire. Market for these items was so good that the firm is continuing to make them.

Plans are in the pre-production stage for the manufacture of a table lamp made from the body of a mortar shell and a special soldering iron designed on an entirely new principle.

Another similar firm quick to catch the conversion idea is the Crown Machine and Tool Company, whose 32 war contracts represented over $1,000,000 in business. Hardly a breathing spell passed after V-J Day before the plant was making over 3,000 metal wrist bands for watches every day. A short time later this enterprising firm started filling a contract for 50,000 tiny toy steam engines and soon plan production of a new type carburetor.

The company's own research department came forth with a new principle in die-casting for plastics, now regarded by plant officials as perhaps the organization's most valued project.

(*Continued on page* 68)

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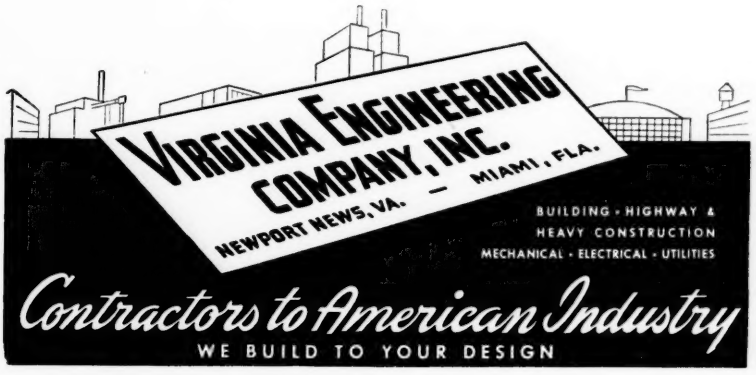
May we tell you the entire story of Virginia Engineering Company? Write today.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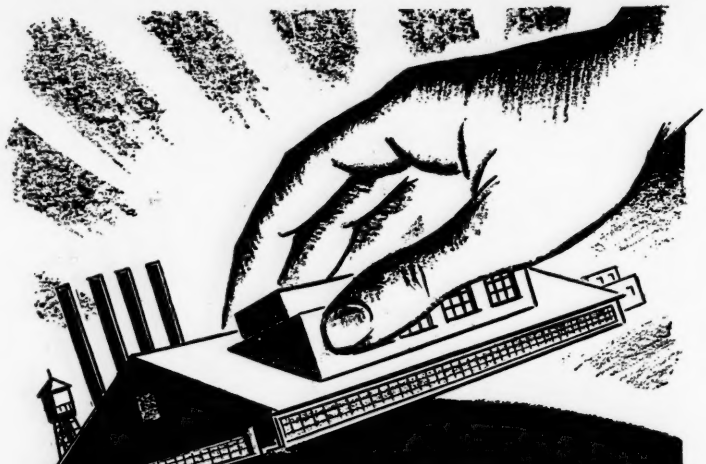

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THE STATE OF MISSOURI
IN THE HEART OF AMERICA

Fort Worth Reconversion

(*Continued from page* 67)

Back in 1942 the small grocery of Frank Pinto was just stringing along, taking aspirin to combat the overnight O. P. A. changes and quotas. The sedative proved to be a booster instead and Frank came forth with a plan to can spaghetti and noodles. He liked the result and so did the public. Today, under the name of the Blue Ribbon Food Products Company Mr. Pinto employs 90 persons in the manufacture and cannning of spaghetti, noodles and macaroni.

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More than 3,000 pounds of the product are made daily and a carload is shipped every other day to distribution centers in 10 Southern and Southwestern states.

Ralston Purina Mills, who maintain one of their largest plants in Fort Worth, plans a 1947 program to spend $200,000 on expansion to double the present plant's output.

Another firm engaged in the manufacture of farm equipment is the Sargent Ltd. plant, which has rapidly stepped up production of loaders, terracers, haystackers and miscellaneous tractor attachments, for a market extending from coast to coast in the Southern half of the nation.

Gillam Soap Works has started construction of a quarter-million dollar plant in the city to more than double the firm's present capacity of 100,000 pounds of all products in an eight-hour day. Marketing its wares from coast to coast the organization proposes to install 14 additional large tanks and equipment is already on order for 600,000 boxes to package its products.

Manufacture of grocery refrigeration equipment covers wide scope in the city's industrial panorama as is seen in erection of an independent plant for Fort Worth of the Zero Plate Company of Dallas. Four states in the Southwest, including Texas, will be marketed by the company in the manufacture of both standard and specially designed equipment for grocery stores. The firm will have its own distribution agency.

Fort Worth has been for many years one of the leading Southwestern cities in the manufacture and distribution of high grade work clothing. Williamson-Dickie Manufacturing Company during war years employed 2,500 persons in the production of five million garments for the Army. Today with 1,600 workers the plant has stepped up its production of merchandise to regular customers.

Summing Fort Worth's boast as a proven newborn industrial and manufacturing center for the Southwest, steadying itself through diversification of products made, is the startling revelation that this city of slightly over 300,000 population

(*Continued on page 72*)

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(*Continued from page* 14)

brought about an even greater wave of lawlessness. Conservative estimates say that ninety per cent of our meat supply comes from the black market today. Other commodities are not far behind. It is indeed a sorry state of affairs for the American people to find their everyday necessities inextricably linked with the criminal world.

Defending prohibition we found a coalition of sincere but misguided fanatics and the thugs for whom bootlegging meant easy money. Defending OPA we find another group of sincere (we hope) and misguided fanatics—are we to believe that they are unaided by black marketeers whose business would collapse if we were to return to a free economy?

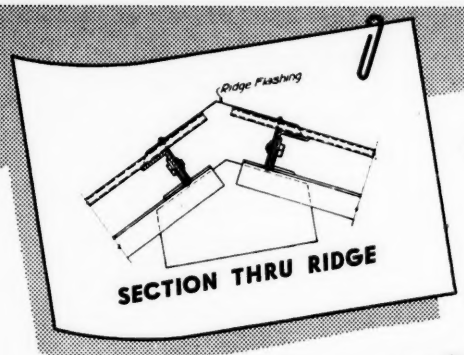
A dictator is a person who exercises his own power for his direct benefit, to the exclusion of the rights and freedom of others. A dictator may increase the worldly standard of living of those whom he rules, but if he does so by exploiting his underlings, he is still a dictator. He may be elevated to his position by a process bearing outward resemblance, or in fact actually constituting a free election, but this does not stop him from being a dictator once he attains power. A man does not have to be a ruler of a totalitarian nation to be a dictator. He may be a political boss, a lodge president, the mayor of a city, the captain of a football team—or a labor leader.

The current theory in Washington seems to be that all businessmen are closely akin to the moneychangers in the temple, and that any business plan for earning a legitimate profit must be wrong, *ipso facto*. "Caveat emptor," "The public be damned," and similar methods of conducting an enterprise have long since been abandoned, if for no other reason than that they were unprofitable in the long run. Yet the government insists on treating business as though it were insisting on its pound of flesh.

The fallacy of this theory was very neatly exposed by Robert Wason, NAM president, in his recent testimony before the Senate Banking and Currency Committee on the OPA. Said Mr. Wason: "Responsible businessmen don't sacrifice their markets, built up over the years, in order to make a quick profit of a few dollars. The real producers—those who have made our standard of living what it is—know that it is only by keeping their prices down that they can stay in business. They have achieved success not by gouging the public, but by finding ways to give the American people better bargains. They will follow this same policy when price controls are removed."

The average citizen gripes about taxes. That is normal and to be expected. He also thinks the federal

(*Continued on page* 78)



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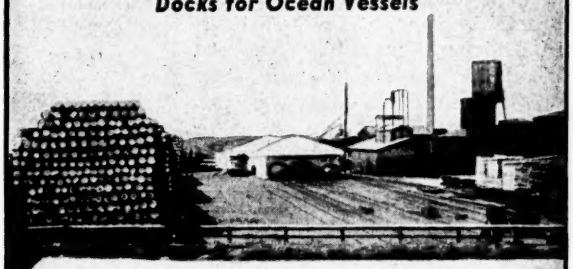

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Fort Worth Reconversion

(*Continued from page* 69)

(growing from 207,677 on January 1, 1940) today has 378 new or expanded businesses in the industrial field. This singular growth has been effected in four short months, from December 1, 1945 to March 1, 1946.

Included in this number are 52 concerns engaged in strictly manufacturing and 38 additionl plants dealing solely with wholesale distribution of manufactured products. This latter category includes oil field equipment, groceries, dry goods, building materials, paper, leather, hotel supplies, plumbing supplies, fruits and vegetables, hardware, drugs, fencing, dairy products, farm supplies, petroleum, petroleum products, electronics, and electrical equipment.

Other industrial products made in Fort Worth include bus bodies, fabricated steel, textiles, paper and wooden boxes, paper and fabric bags, boots, shoes, saddles, printing and publishing, cement, furniture, mattresses, store fixtures, animal serums, chemicals, cotton oil, roofing, peanut products, ferrous and nonferrous castings, powdered eggs, shelled pecans and salad dressing.

The city maintains approximately 2,600 retail and service establishments handling portions of the products made locally.

Aiding in the rapid dissemination of products made in Fort Worth are the nine trunk line railroads with sixteen outlets serving the city, supplemented by three interstate air carriers in American Airlines, Braniff Airways and Delta Airlines. In addition, Texas Air Lines and Westland Air Lines offer inter-state service and Slick Airways, Inc. makes twice weekly cargo stops for shipments of freight anywhere in the country. Texas Air Transport, Incorporated, makes 12 flights daily as a shuttle service between Fort Worth and Dallas, and 49 regularly scheduled planes arrive daily at the city's municipal airport.

Unspun Cotton

(*Continued from page* 45)

items. Most unspuns can be made into bags by sealing the edges without sewing. They make excellent tea bags since they impart no taste to the brew, keep foreign particles out of the tea and yet are porous enough to let water reach it. During the war unspun cotton bags were widely used to package silica gel, a substance that prevents motors and machine parts from corroding while not in use.

Disposable diapers absorbent and soft enough to meet medical requirements soon should be in considerable demand, especially in small towns where there are no diaper services or laundries. They will relieve mothers of one of the most distasteful infant problems—diaper washing.

Cotton's napkin, handkerchief and towel markets have been diminishing for several years because of the use of paper for such purposes. Paper has been cheaper, although not as desirable as spun cotton, and consequently has been in increasing demand for "disposables."

Unspun cottons are expected to meet paper in the field of price. They are more absorbent than paper and their price should become even lower as manufacturers continue their experiments and improve production processes. Unspun cottons are new and certain to be improved.

Thus the cotton industry has entered the postwar era with two new definite markets typical of its constant contribution to mankind. Both cotton insulation and unspun cotton fabrics will help to bring prosperity to the cotton-producing states and to make life more enjoyable for all Americans at increasingly lower cost.

Savannah Paper Plant

(*Continued from page* 41)

companies, and negotiated by the banking firm of Johnson, Lane, Space & Co., Inc., of Savannah. Amount of the transaction was $950,000.00.

In 1942-43, Port Wentworth Corporation greatly expanded and improved the village of Port Wentworth by constructing 150 modern homes under the F.H.A. plan, so that today it has become a prosperous town of nearly 5,000 inhabitants. The Corporation will soon undertake a further expansion of 200 additional homes for mill employes, estimated to cost about $1,000,000.

And this is not all! The State of Georgia is working out plans for a State Port estimated to cost $8,500,000. Plans for this project were begun in 1944, when the City of Savannah appropriated funds to defray its part of the survey cost. The survey was prepared by the engineering firm of Frederick R. Harris, Inc., of New York. A special report covering certain features of the undertaking was prepared by Wallace Clark & Company of New York. The site chosen is the Depthford tract fronting on the Savannah River downstream from the main part of the City. Robert & Company of Atlanta is consulting engineer. The survey was completed in November last year.

The terminal will have berthing space for five large ocean-going ships, four transit sheds, two warehouses, storage yards and other equipment. It will be the aim of its sponsors to make Savannah a world port. Export of naval stores, for which Savannah provides world quotations, should be greatly stimulated by the addition of this facility. Lumber, building materials, chemicals, metal products, nonmetallic minerals, tobacco and other agricultural products should likewise find wider export markets. Raw sugar has been imported for many years in substantial quantities as has been petroleum products. One of Savannah's largest import items has been nitrate of soda and other fertilizer materials.

Since decline of cotton exports, numerous large industries have located in the Southeast, and hence when all these factors are added up, it is indicative of the great possibilities open for development when the new port facilities become available. It is hoped that by means of rendering the quickest, cheapest and most convenient, service, the commerce of the port can be built up to sizeable proportions.

Savannah was given a touch of internationalism when delegates from many nations assembled at the General Oglethorpe Hotel to implement the Bretton Woods plans for establishing a World Bank and a World Fund, the meeting beginning on March 8th and continuing for about a fortnight. The objects of the Bank and the Fund relate largely to the rehabilitation of countries dev-

(*Continued on page* 74)

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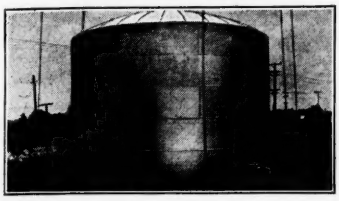

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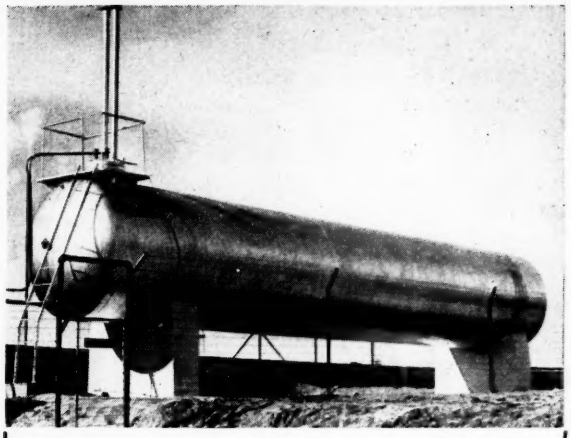

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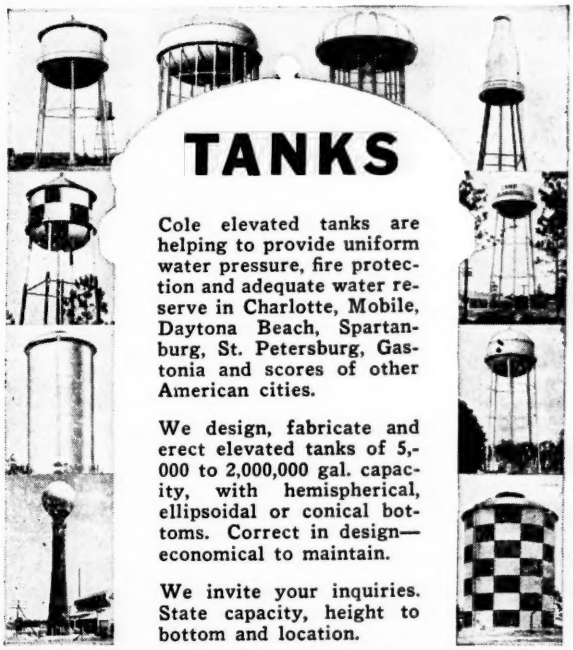

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Savannah Paper Plant

(*Continued from page 72*)

astated by the war and to stimulate international trade, including stabilization of currencies. Many of these delegates were leading bankers and business men in their respective countries. Not only were they impressed by the hospitality and charm of the City, but also by its possibilities as a port with modern facilities through which to develop international trade on an expanding scale.

Last December plans were filed by Port Wentworth Corporation with the U. S. District Engineer at Savannah requesting that the channel of the upper section of the Savannah River be extended to the Southern Paperboard Corporation's mill site and deepened to 30 feet at mean low tide. The report of the District and Division Engineers has been completed and forwarded to Washington. The House Rivers and Harbors Committee has recommended that Congress authorize a 1.45-mile extension of the Savannah harbor channel, estimated cost, $809,100. When this improvement is completed, the mill will ship a substantial part of its output by coastwise vessels to eastern ports. A dock 400 feet long is included in the plans, which will enable the mill to load the huge jumbo rolls of paperboard directly from its warehouse to ships alongside its dock.

Another long delayed project at Savannah is soon to be undertaken. The Seaboard Air Line Railway bridge crossing the Savannah River at a point less than a mile upstream from the city limits will be replaced by a new bridge at an estimated cost of $700,000, of which the Government is expected to pay 85% to 90%, and the balance by the Railway. The existing span has a width of only 116 feet, and for some years has been considered a menace to navigation of large ships, due to strong currents and tidal conditions. The new bridge will have an opening of 200 feet with a vertical lift span similar to that of the highway bridge across Jacksonville Harbor. The underside of the new span will be at least 135 feet above mean low water. Thus the five-mile water front of the upper harbor above this bridge will be opened up for safe navigation of large cargo ships all the way up to the new mill site.

Radar Boon to Weather-Blind Air, Sea Traffic

(*Continued from page 49*)

Luftwaffe to abandon the daylight assaults for night attacks. The resulting ground controlled interception bases on radar detection of the enemy planes was an entirely new technique in air defense. In addition to leading the defense to the enemy, radar was used to make it more effective.

Radar is said to have added a new dimension to sea warfare because of its ability to penetrate the brilliant light from "up-sun" and provide the means by which enemy ships were detected, accurately ranged and sunk in some instances, without a single man having seen the target visually.

Radar resembles radio in some respects. Both are based on transmission and reception of electro-magnetic waves. However, the waves used in radar are much shorter and of greater frequency than those used in ordinary radio broadcasting. Another difference is that the direction of the radar waves is controlled within the arc of a few degrees instead of being broadcast in all directions.

Both the radar transmitter and the receiver are located at the same point. Thus the time it takes for the waves to travel to the target and back again may be measured, the objective located and the distance electronically calculated within the space of a few millionths of a second.

The transmitter sends out the pulsations in intense bursts of short duration. During the intervals between the transmitted bursts, the receiver records the signals echoed from objects within the path of the narrow radar beam which sweeps the sky or the horizon of the ground in much the same manner as a searchlight.

Radar signals, as do those of lower frequency radio, travel with the speed of light. At 186,000 miles per second, the radar pulsations return from a target 100 miles distant one thousandth of a second after the signal was sent on its way. One of the remarkable facts of radar was the design of instruments to measure the ultra-short time intervals involved.

While Marconi had previously urged use of short wave radio for obstacle detection and German scientists had worked on the problem, two scientists at the Naval Research Laboratory in 1922 made the observations which resulted in the suggestion that destroyers on a line could be equipped with apparatus that would show the passage of enemy vessels between any two of the destroyers.

Considerable study had to be done to solve the various problems before the principle of radio wave reflection could be applied to working radar systems. These were mostly in four categories, which were:

1—Selection of an operating frequency which would make it possible to focus the radio energy into a narrow beam without use of a large size antenna structure;

2—Design of transmitters which could produce tremendous amounts of power for extremely short periods of time.

3—Design of ultra-high frequency receivers which could detect the infinitesimal radio energy reflections from objects in the path of the beam.

4—Development of electronic circuits for distance measurement and visual display of the reflected signals.

Extent of the first problem may be seen from the fact that the ordinary radio broadcasting station operates at a frequency of 1,000 kilocycles, or 1,000 thousand cycles per second—a frequency which is considered low by radar engineers who work with 3,000 or 10,000 megacycles, or 3,000 million or 10,000 million cycles.

A new science had to be developed almost overnight. Waveguides replaced wires as transmission lines. Magnetrons, a vacuum tube capable of generating radio energy at high frequencies, became the standard device for the transmitter. Antennas took on the appearance of searchlight reflectors, which they in effect are.

By the end of the war, hundreds of millions of dollars worth of radar equipment was pouring from American factories. Long past its "horseless carriage" age, radar had ma-

(*Continued on page 76*)

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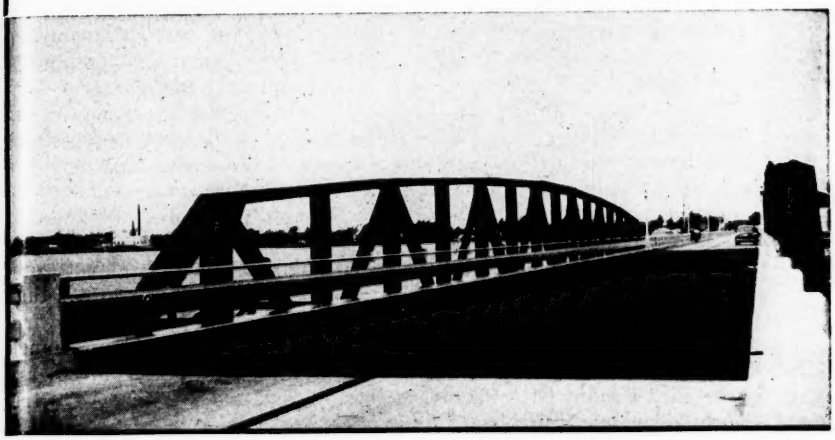

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Radar

(*Continued from page* 74)

tured. It was no longer an aircraft or surface vessel detecting device. Its many military and naval uses in the air, on the ground and on the sea were amazing. Among these were:

In aircraft—
Location of enemy submarines
As a bombsight—radar bombing was used by the B-29's over Japan and by the B-17's over Germany
Navigation
Pointing aircraft guns
Interception of enemy aircraft by night fighters

On the Ground—
Detection of enemy aircraft
Automatic pointing of antiaircraft guns (this device brought down the buzz bombs)
Direct friendly fighters at enemy aircraft (ground controlled interception)
Direct friendly fighters on "blind" bombing missions
Location of enemy mortar batteries
"Talking down" friendly aircraft to a "blind" landing (ground controlled approach)
Direct coast artillery fire at enemy ships

On Ships—
Detection and location of enemy aircraft and ships
Directing gunfire at enemy aircraft and ships
Navigation
Maintenance of contact with ships in convoy

The term radar describes no single instrument. It can mean a hundred pound outfit about the size and shape of a small bomb for installation on an airplane; it can be a couple of watertight boxes on the deck of a PT boat; it can be several tons of equipment in a large trailer, or it may be a group of shacks and trucks with a giant antenna tower, its own telephone switchboard and manned by a company of soldiers.

A standard radar set is made up of several major units which are interconnected electrically. These are: A transmitter or radio frequency oscillator, a modulator or "keyer," an antenna with a scanning mechanism, a receiver and an indicator.

The transmitter consists of a radio frequency oscillator which produces electromagnetic waves of energy. Because of the necessity of beaming this energy while at the same time being able to receive suitable echoes, the radar transmitter makes use of very high and ultra high frequency radio waves. The higher frequencies are used in radar techniques as opposed to the lower frequency radio waves, which are received by the average home radio receiver, so as to minimize the size of radar antennas and equipment. At the high frequencies, small components give the same results that would be obtained on lower frequency radio waves using much larger equipment, and objects are better reflected at the high frequencies.

The modulator makes possible the accurate determination of range. Electromatic waves are emitted in the form of pulses instead of continuous waves. The pulses are of very short time duration of one mil-

(*Continued on page* 80)

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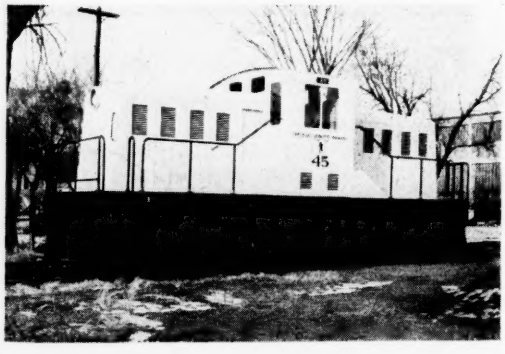

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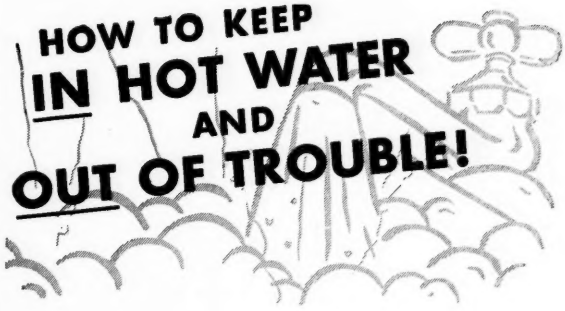

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(*Continued from page* 70)

government is spending too much money. But all too often he divorces these two situations in his mind, failing to realize that it is HIS money the government is spending so freely.

The married man with one child earning fifty dollars a week pays approximately $166 in income tax to the federal government each year. If such a man realized that his $166, as well as a lot of the other fellows' $166, was involved in the latest billion dollar spending headline, perhaps it would jar him out of his apathy. If a $50 a week man spends $166 in any way except taxes, he gets his money's worth or knows the reason why. When people of modest means start paying attention to where their tax dollars are going, our government will stop playing Santa Claus with their money.

Mr. Alfred P. Sloan, Jr., Chairman of the Board of Directors of General Motors, in a recent message to GM stockholders pointed out that the union's "ability to pay" argument in the recent strike is both unsound and unworkable. "Consistent application of this theory to a business," stated Mr. Sloan, "would remove all incentive to reduce costs, increase efficiency, improve existing products and develop new products. It would involve the surrender of the prerogatives that management must have if it is to direct the affairs of the business successfully."

Mr. Sloan also told the stockholders that, when the union wanted to examine the books, it was not seeking a record of past results such as figures on sales, earnings, pay rolls, investments, reserves and the like. All these have been available to the public over the years. What the UAW-CIO actually wanted was a look at management's forecasts of *future* costs, plans, profits and other close trade secrets which were not, nor never can be, fit subjects for wage negotiations.

Inclusion of a Division of Engineering in the commission of civilians which will administrate the use of atomic energy under terms of the McMahon Bill, unanimously approved by the Senate Atomic Energy Committee, was lauded by the presidents of four national engineering societies recently in a telegram to Senator Brien McMahon of Connecticut, the committee's chairman.

Signing the telegram, which pointed out the contributions of engineers to the Manhattan project, but which stressed the potential contributions the profession can make to peacetime constructive use of nuclear energy in industry, were: W. W. Horner, president, American Society of Civil Engineers; D. Robert Yarnall, president, American Society of Mechanical Engineers; William E. Wickenden, president, American Institute of Electrical Engineers, and James G. Vail, president, American Institute of Chemical Engineers.

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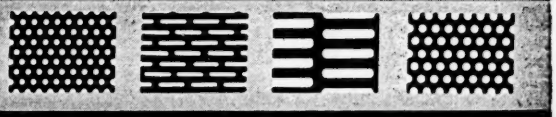

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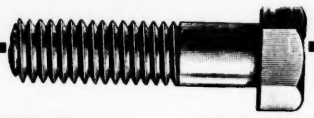

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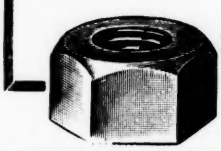

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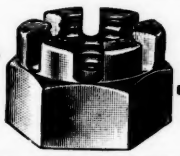

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Photograph courtesy of Diamond T Motor Car Co., Chicago, Ill.

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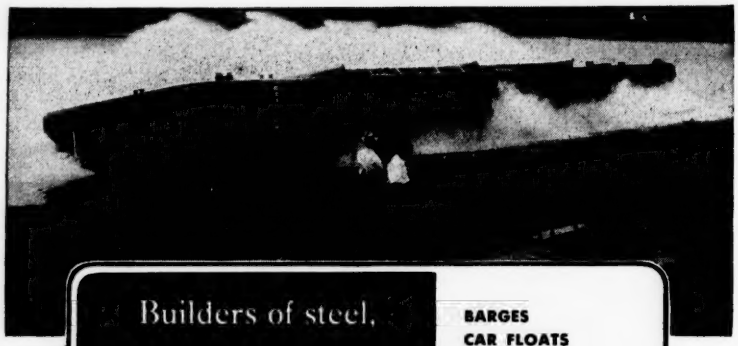

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Radar

(*Continued from page 78*)

lionth of a second or less. After every pulse, the transmitter is silent while echoes from these emitted pulses are being received. The modulator, or "keyer" is the unit which turns the transmitter on and begins forming these pulses.

The radar receiver employs a conventional circuit not far removed in principle from a home receiver, except that greater precision is required so as to be effective at the higher frequencies. The receiver must have a powerful amplifier and be extremely sensitive. Because the same antenna is used for outgoing and incoming signals, a method of disconnecting the receiver from the antenna while the transmitter is functioning had to be developed. Within a millionth of a second after the transmitter has completed its pulse, the receiver must be ready to receive the relatively weak echo signals. All of this is accomplished electronically rather than with conventional switches which would be far too slow.

The indicator commonly used is the PPI scope, or the plan-position indicator. A line of light rotates from the center of the scope, and is synchronized to the radial sweep of the antenna. As an echo is reflected from a solid object, it is shown on the PPI scope as a blob of light. Thus ships, planes, buoys, or all solid objects are shown on the scope in their relative plan-position.

The scanning structure must swing around or up and down to direct the beam over that portion of space the radar set is intended to cover. In cases where the small sector is to be scanned, the whole antenna structure is not moved but the scanning is done rapidly by electricity. No method has been developed so far for extending this rapid electrical scanning to cover more than a relatively small sector.

Waveguides, which are essentially hollow pipes, are used to carry the radio frequency energy from the oscillator to the antenna and the echo from the receiver. Because of these pipes, the radar electrical circuit is sometimes called "plumbing."

The receiver normally occupies a small box in the complete radar set and yet it is a marvel of engineer-

ing. One of the problems closely connected with the receiver was the method of disconnecting it from the antenna during the intervals when the transmitter is operating so it would not be paralyzed or burned out by the stupendous bursts of radio frequency energy generated by the transmitter.

The indicator is the part of the radar which presents the information collected by the set for visual interpretation by the operators. Most sets use a cathode-ray tube for this purpose, which is known as the "scope." One of the problems was to retain the light of the tube so it didn't fade almost instantly from the map-like dials. The solution was a special screen which would continue the glow for some time after being lighted by the signal. Thus the whole map is displayed at once.

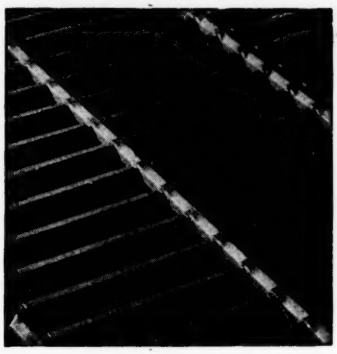
Bombs to Beauty

(*Continued from page* 39)

ment from men than maybe a mink coat or maybe a diamond bracelet."

The Wynnes' war work was associated with electronics, radio, communications, precision crystals and radar. During the war the firm made certain precision parts for the Clinton Engineer Works laboratory without realizing what they were for. Recently the company received a letter from Clinton thanking them for making those parts. They were used in the process of developing the atom bomb.

Their reconversion achievement is another striking example of the strides being made by Southern industry and a definite tribute to the quality of Southern labor.



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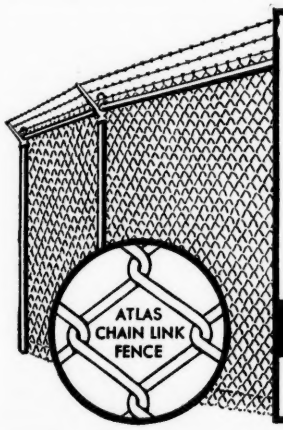

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LeTourneau in Texas

(*Continued from page* 51)

120 days working with these machines in conjunction with classroom education they will be given tests, and upon passing such tests they will go on the payroll for production work in the factory.

It is proposed that the school include some agricultural courses and other vocational subjects in its curriculum, but as yet no outline of the program has been made. Only the broad philosophy of the undertaking has been determined.

A student worker will be permitted to study one subject at a time. He may spend as much as a year, for example, on mathematics, progressing as rapidly as his ambition and capability permits. He may put in another year studying electricity, and several more on physics.

Mr. LeTourneau visualizes the institute that bears his name as a school for life-time learning, since there are no degrees awarded and the knowledge obtained is put to immediate use. The school will, of course, be available to veterans taking advantage of the educational privileges of the GI Bill.

The Harmon General Hospital plant is almost ideally suited for this unique combination of school and factory. Built at a cost of $7,000,000, the facilities include a steam plant, laundry, bakery, swimming pool, gymnasium, theater, tennis courts, outdoor handball court, chapel, library, warehouses and railroad spur, with 10,165 lineal feet of railroad track.

The Tournalayer, chief product of the new factory, is highly newsworthy in its own right. The machine lays houses in a manner reminiscent of a hen laying eggs. It is actually a huge form, with inside dimensions of 24 ft. by 30 ft. by 9½ ft. This form is filled with concrete, which hardens in 24 hours. To place the house on its intended site, the operator of the machine pushes an electric button, which collapses the inside form walls away from the house. Then the outside form, still containing the house, is transported to the home site. The house is left standing on the broad foundation which is a part of the walls, and the Tournalayer is off to erect another dwelling.

Within the dimensions given above, an unlimited number of floor plans is possible, simply by moving the location of inside partitions. Doors and windows are made by means of metal frames which are attached to the forms, and may be placed wherever the prospective owner desires.

No immediate plans for marketing have been made, as the LeTourneau Corp. intends to take care of the needs of its own personnel before quick-order concrete homes are made available to the public. However, it is believed that, with the LeTourneau Institute producing new ideas and highly skilled labor, it will be possible in the not too distant future to have a brand-new dwelling place on 24 hour notice.

Rolling Mill Subsidiary Building at Halethorpe

Armco Drainage and Metal Products, Inc., subsidiary of the American Rolling Mill Co. has the foundations finished for a pipe, tank and welding plant on Halethorpe Farms Road and Washington Boulevard, southwest of Baltimore.

Construction forces are now waiting for the structural steel for the 180 by 210-foot building, which will have steel roof and siding.

The foundation work was done by Edward Nunn, of Catonsville, Structural steel is being furnished by Bethlehem Steel Co., with erection scheduled by Armco affiliates.

The plant will produce riveted culvert pipe and will engage in tank fabrication as well as miscellaneous welded work. Date of beginning operations is placed late in August. N. R. Cressman will be production supervisor.

Soldering Heater Designed

The Marion Portable Bench-type Induction Heater, produced by the Marion Electrical Instrument Co., of Manchester, N. H., is now available for industries where small parts need soldering. Developed to meet the need for clean soldering of small parts, and for soldering of metal to metallized glass and ceramics, this new induction heater opens the possibility of radically reducing unit costs for soldering operations. And the low initial cost and maintenance of the heater make it attractive to many manufacturers who have heretofore hesitated to avail themselves of induction heating.

New Electronic Counter

A new electronic counter, for application where counting control is important, has been announced by Potter Instrument Co., 136 Roosevelt Ave., Flushing, N. Y. This unit, a Dual Predetermined Electronic Counter, is being used in slide fastener manufacture, the counting and packaging of small items such as pills and buttons, and in rolling mills. In slide fastener production, the length and spacing of the fasteners can be varied quickly and conveniently and, in addition, greater accuracy of fastener length is assured. Where the counting and packaging of small items are to be accomplished, great economy is realized by the elimination of the usual ratio weighing process or hand-operated scoops.

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